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Bureau of Land Management**

**Environmental Assessment
DOI-BLM-UT-Y010-2016-0041-EA**

June 2016

**Sand Flats, Scharf Mesa and Hotel Mesa
Grazing Allotments Ten Year Permit Renewal**

Location: Grand County, Utah

Grazing Authorization Number: 4300428

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Sand Flats, Scharf Mesa and Hotel Mesa Grazing Allotments Ten Year Permit Renewal

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Sand Flats, Scharf Mesa and Hotel Mesa Grazing Allotments Ten Year Permit Renewal

(DOI-BLM-UT-Y010-2016-0041-EA)

1.0 PURPOSE & NEED

1.1 Introduction

This Environmental Assessment (EA) has been prepared to disclose and analyze the environmental consequences of renewing a ten year grazing permit on the Sand Flats, Scharf Mesa and Hotel Mesa Allotments with additional terms and conditions and a proposed Sand Flats, Scharf Mesa and Hotel Mesa Allotment Management Plan (AMP). The EA is a site-specific analysis of potential impacts that could result with the implementation of a proposed action or alternatives to the proposed action. The EA assists the Bureau of Land Management (BLM) in project planning and ensuring compliance with the National Environmental Policy Act (NEPA), and in making a determination as to whether any “significant” impacts could result from the analyzed actions. “Significance” is defined by CEQ and is found in regulation 40 Code of Federal Regulations (CFR) 1508.27. An EA provides evidence for determining whether to prepare an Environmental Impact Statement (EIS) or a statement of “Finding of No Significant Impact” (FONSI). If the decision maker determines that this project has “significant” impacts following the analysis in the EA, then an EIS would be prepared for the project. If not, a Decision Record may be signed for the EA approving the selected alternative, whether the proposed action or another alternative. A Decision Record (DR), including a FONSI statement, documents the reasons why implementation of the selected alternative would not result in “significant” environmental impacts (effects) beyond those already addressed in the Moab Resource Management Plan (RMP) (October, 2008).

1.2 Background

Traditionally grazing has been authorized on the Sand Flats, Scharf Mesa and Hotel Mesa Allotments through a ten-year term grazing permit. The current permittees (Grazing Authorization #4300428) requested to renew their ten year grazing permit for these allotments. These allotments have been grazed primarily by cattle.

These allotments are located approximately 17 to 19 air miles northeast of Moab, Utah within the Dolores Triangle area (Appendix B, Map #1, #2 & #3). The current grazing permit is from August 31, 2015 to July 31, 2025, under the authority of Section 402 (c) (2) of FLPMA, 1976 as amended, and contains the same terms and conditions as the previous permit or lease. This permit or lease may be canceled, suspended, or modified, in whole or in part to meet the requirements of applicable laws and regulations.

The Animal Unit Months (AUMs) discussed in this document and shown in Table 1, reflect the authorized or Active AUMs in the existing ten year grazing permit (Grazing Authorization #4300428). Active AUMs represent those AUMs associated with valid grazing preference.

Table 1: Current Grazing Use Authorization

Allotment Name and Number	Livestock			Active Permitted Use (AUMs)	Acres	Land Status
	No.	Kind	Season of Use			
Sand Flats (00013)	164	Cattle	10/01 to 05/31	1234*	31,754 1,446 597	BLM State Private
Scharf Mesa (05849)	78	Cattle	12/01 to 03/31	312	9,478	BLM
Hotel Mesa (05850)	44	Cattle	01/01 to 04/30	174	2,642 422	BLM Private

*The permittees for the Sand Flats Allotment has 1,234 active AUMs of permitted use on BLM which is 94% public lands and additional 74 AUMs which is on State Lands.

The BLM recognizes these AUMs as valid, while understanding that forage allocation varies from season to season, and from year to year. Both qualitative (e.g. visual observations, photo documentation, utilization, etc.) and quantitative (e.g. actual use documentation, trend data, etc.) monitoring would be used to determine whether the level of use is appropriate for the area and if any adjustments (e.g. stocking rate, season of use, etc.) are necessary to obtain resource objectives. Monitoring studies would continue to be carried out to address impacts cattle grazing may have on the existing vegetation communities. Current monitoring studies would be supplemented with both additional sites and additional techniques (e.g. line point intercept, nested frequency, and repeat photographs). These studies would focus on livestock distribution, plant community composition, overall utilization, and trend of key plant species. The objective for monitoring ecological health of the allotments is to evaluate stocking rates.

Modifying current grazing practices on the Sand Flats, Scharf Mesa and Hotel Mesa Allotments by developing a new Allotment Management Plan (AMP) for these allotments would improve desired plant species, especially in a small portion of Sand Flats East Pasture (180 acres) and Sand Flats West Pasture (300 acres). The AMP would include additional opportunities for rotational grazing and spring rest. Sand Flats Allotment season of use would be changed from 10/01 to 05/31 to 11/01 to 05/31.

1.3 Need for the Proposed Action

The need for the proposed action is to authorize livestock grazing to continue on the Sand Flats, Scharf Mesa and Hotel Mesa Allotments in a manner that would meet multiple use objectives of the BLM. The need is also to modify current grazing practices in these three allotments by developing a new Allotment Management Plan.

Improved allotments management would be achieved by modifying and renewing a grazing permit under the authority of the Taylor Grazing Act (TGA), the Federal Land Policy Management Act (FLPMA) and the Moab Field Office Resource Management Plan, approved in October of 2008 (2008 RMP). The grazing permit would be renewed for a period of ten years in accordance with the Federal Regulation at 43 CFR 4130.2. The BLM is responsible for ensuring that all management actions on public land conform to the appropriate land use plans, are site specific, and provide for balanced uses among different resource values.

1.4 Purpose(s) of the Proposed Action

The purpose of the proposed action is to ensure livestock grazing on the Sand Flats, Scharf Mesa and Hotel Mesa Allotments would be managed in a manner that complies with applicable laws (Section 325 of Public Law 108, TGA, etc.), regulations, and policies including Fundamentals of Rangeland Health (43 CFR 4180), Utah's Standards for Rangeland Health and Guidelines for Grazing Management and the demands of the 2008 RMP.

1.5 Decision to be made

The BLM Moab Field Office will decide whether or not to renew the grazing permit and if renewed what modifications will be made from the current permit.

1.6 Conformance with BLM Land Use Plan(s)

As required by Federal regulation 43 CFR 1610.5, the proposed action and alternatives addressed in this document have been determined to be in conformance with the goals and objectives of the of the Livestock Grazing (GRA) section Moab RMP (2008) which are 1) “achieve the attainment of Standards for Rangeland Health and other desired resource conditions by maintaining appropriate utilization levels of the range through management prescriptions and administrative adjustments of grazing permits and 2) achieve healthy, sustainable rangeland ecosystems that support the livestock industry while providing for other resource values such as wildlife habitat, recreation opportunities, clean water, and functional watersheds.” It has been determined that the proposed action and alternatives would not conflict with other decisions throughout the Moab RMP (2008).

1.7 Relationship to Statutes, Regulations, or Other Plans

Agency policy is that “compliance with all applicable laws and regulations” includes consultation, coordination and cooperation with affected individuals, interested publics, States and Indian Tribes, completion of the applicable level of NEPA review; and consultation with the United States Fish and Wildlife Service (USFWS) under Section 7 of the Endangered Species Act (ESA), as appropriate. A grazing permit renewed under the authority of Public Law 108-108 would be modified (i.e., cancelled and renewed) if the analysis and/or any needed consultation indicated a change was warranted.

The proposed action and alternatives are in conformance to the following laws and/or agency regulations/policy as stated in Table 2:

Table 2: Federal Authorities and Responsibilities	
Land Management and Use	
Federal Land Policy and Management Act of 1976, Section 201(a) (PL 94-579; 43 USC 1701 et seq.)	Directs the BLM to manage public lands “in a manner that will protect the quality of scientific, scenic, historic, ecological, environmental, air and atmospheric, water resources and archeological values” and to develop resource management plans (RMPs) consistent with those of state and local

	government to the extent that BLM programs also comply with federal laws and regulations..
National Environmental Policy Act of 1969 (PL 91-190; 42 USC 4321); 40 CFR Parts 1500-1508 CEQ implementation of NEPA; BLM Handbook H-1790-1; U.S. Department of the Interior Department Manual 516, Environmental Quality	Evaluation of impacts to environmental resources that may result from a proposed action prior to its implementation.
Grazing	
43 Code of Federal Regulations 4100 Grazing Administration-Exclusive of Alaska; General	Directs the BLM in the administrative functions of grazing management.
The Pierce Act of 1938 (52 STAT. 1033)	Directs federal agencies to lease State, county, or privately owned lands for grazing purposes with the boundaries of a grazing district. The leasing of these lands would be to promote the orderly use of the district.
The Taylor Grazing Act of 1934 (P.L. 73-865)	Directs the federal agencies to stop injury to the public grazing lands by preventing overgrazing and soil deterioration; to provide for their orderly use, improvements, and development; to stabilize the livestock industry dependent upon the public range.
Rangeland Health; Standards and guidelines for Healthy Rangelands (BLM UTSO, 1997)	Directs the field offices within Utah to set the minimum standard to achieve a healthy rangeland. It also sets guidelines for grazing management to help achieve those standards.
Public Rangelands Improvement Act of 1978 (PRIA).	Requires the BLM to manage, maintain, and improve the condition of the public rangelands so they become as productive as feasible.
BLM Utah Riparian Management Policy (Instruction Memorandum IM No. UT 2005-091, September 2005).	Provides specific guidance to Utah BLM riparian lands while supporting all BLM national guidance directives (BLM Manual 1737 – Riparian-Wetland Area Management, Riparian-Wetland Initiative, and others).
Wildlife and Plants	
Endangered Species Act of 1973 (PL. 85-624; 16 USC 661,664 1008)	Coordination, consultation and impact review regarding generally listed threatened and endangered wildlife and plant species.
Migratory bird Treaty Act of 1918 (P.L. 65-186, 16 USC 703-712, as amended); EO 13186 Responsibilities of Federal Agencies to Protect Migratory birds; BLM MOU WO-230-2010-04 To Promote the conservation of Migratory Birds	Migratory bird impact coordination and protection of nesting migratory birds.

State of Utah Authorities and Responsibilities	
Cultural Resources	
Section 106 of National Historic Preservation Act of 1966, as amended (16 U.S.C. 470 et seq.) and Advisory council Regulations on the Protection of Historic and Cultural Properties, as amended (36 CRF. Part 800)	Utah State Historic Preservation Office consultation on cultural resource survey, evaluation, and mitigation.
Wildlife	
UDWR Rules and Regulations, Rule 657 series; UAC Title 23, Wildlife Resources of Utah. Utah Division of Wildlife Resources	Coordination on wildlife and state sensitive species; management of big game and wildlife.
Grand county Authorities and Responsibilities	
County codes	Road use agreements/oversize trip permits, access permits, and road crossing; noxious weed control and designates economic uses such as livestock grazing.

The proposed action and alternatives are in compliance with the Grand County Utah General Plan (2012). This Plan designates the land within the allotment as open for economic uses such as livestock grazing.

School and Institutional Trust Land Administration (SITLA) leases 1,446 acres of land within the Sand Flats Allotment to the current permittees for livestock grazing. Livestock grazing is consistent with SITLA management objectives for these lands.

There is one Activity Plan within the Sand Flats, Scharf Mesa and Hotel Mesa Allotments.

1. The Dolores Triangle Habitat Management Plan (HMP) implemented in 1979, is intended for deer, elk and bighorn sheep, but also has objectives for raptors, waterfowl, and native trout. Under this HMP, 100,686 acres of land administered by the BLM are to be improved and maintained by providing food, cover, water and open space. The Sand Flats, Scharf Mesa and Hotel Mesa Allotments are entirely within the HMP and include about 44% (43,874 acres) of the HMP acreage. Coordination with Utah Division of Wildlife Resources occurred during preparation of the HMP and is ongoing with respect to management of wildlife resources. The Proposed Action is in conformance with the HMP because the standard terms and conditions for season of use and AUMs allow for food, cover, water and open space for wildlife. There would be no change in class of livestock for the grazing permit renewal from cattle to domestic sheep within this HMP area due to the disease problem between domestic sheep and bighorn sheep.

1.8 Identification of Issues

The BLM conducted internal review and public scoping to solicit input and identify environmental issues associated with the Proposed Action. Through input from the BLM interdisciplinary team (IDT), issues were identified for this EA by considering the resources that could be affected by the implementation of the proposed action and alternatives. These issues

were identified during the internal review and are summarized below. Documentation of the determination of impacts is included in this EA as the Interdisciplinary Team Analysis Records (Appendix B). The notice of the preparation of an EA was posted on the ePlaning on December 8, 2015. Press release was issued on January 25, 2016 seeking public comments on the Proposed Grazing Permit Renewal for Sand Flats, Scharf Mesa and Hotel Mesa Allotments. The current grazing permittees were notified by mail on March 13, 2014 and by phone on September 17, 2015 of the BLM's intent to evaluate grazing on the Sand Flats, Scharf Mesa and Hotel Mesa Allotments through a NEPA analysis.

Initial scoping closed on February 15, 2016. Scoping comments were received from three parties.

- 1) The State of Utah, Office of the Governor: See Section 2.5 alternatives considered, but Eliminated from Further Analysis: 1) if the allotments are in good condition the BLM should look to see if the allotments can sustain an increase in numbers. 2) Conduct analysis for common use on these allotments. Studies have shown that the combination of sheep and cattle grazing on the same allotment can improve range conditions compared to all sheep; the BLM must consider whether the allotments could be better managed through common use.
- 2) Western Watersheds Project; The comments from Western Watersheds Project were addressed to the BLM Vernal Field Office dated November 3, 2007 were for the Winter Ridge AMP group of allotments, not the Sand Flats, Scharf Mesa and Hotel Mesa Allotments and therefore are outside the scope of this document and will not be considered.
- 3) Marc Thomas: Requested five benchmarks of sustainable grazing and restoration be incorporated into the EA. The proposed action and alternatives incorporate the pertinent sections and action required from the Moab RMP 2008, the Endangered Species Act (ESA) of 1973 as amended, Section 106 of the National Historic Preservation Act of 1966, as amended, Standards of Quality for Waters of the State, R317-2-6, Utah Administrative Code, December 1997, Fundamentals of Rangeland Health (43 CFR 4180) and Utah's Standards for Rangeland Health and Guidelines for Grazing Management, and the BLM Utah Riparian Management Policy (Instruction Memorandum No. UT 2005-091), which address benchmarks 1 through 4. Benchmark 5 is not supported by the Moab RMP 2008, and 43CFR part 4100 Grazing Administration, does not contain regulatory authority to allow an accountability benchmark. Additionally the proposed action and alternatives include terms and conditions which incorporate the Moab RMP 2008 grazing utilization management decision, which requires livestock to be removed when utilization thresholds are met.

The issues identified internally and externally during scoping are listed below:

1.8.1 Livestock Grazing

- How would livestock grazing management impact the permittees of the Sand Flats, Scharf Mesa and Hotel Mesa Allotments?

1.8.2 Soils

- How will grazing management impact soils and biological soil crusts?
- How would changing grazing management impact vegetation in order to make progress towards meeting and/or maintaining Utah's Upland Soils Standards?

1.8.3 Threatened and Endangered Species, State Sensitive Species, Migratory Birds and Wildlife

- How would grazing management impact federally listed ESA Mexican Spotted Owl (MSO), Southwestern Willow Flycatcher (SWFL) and Yellow-billed Cuckoo (YBC) and their habitats?
- How would grazing management impact federally listed ESA Razorback sucker, Colorado pikeminnow, Bonytail chub and Humpback chub and their habitats?
- How would livestock grazing impact migratory birds?
- How would livestock grazing impact state sensitive species of bird, mammal and fish species and their habitats?
- What are the impacts on deer and elk crucial winter range within the Sand Flats and Scharf Mesa Allotments by having livestock grazing?
- What are the impacts on Desert bighorn sheep within the Knowles Pasture of the Sand Flats Allotment by having livestock grazing?

1.8.4 Threatened and Endangered Species, and BLM State Sensitive Plant Species

- Portions of the Sand Flats, Scharf Mesa and Hotel Mesa Allotments provides habitat for Jones Cycladenia. How would grazing management impact federally listed Jones Cycladenia and its habitats?
- Portions of the Sand Flats, Scharf Mesa and Hotel Mesa Allotments provides habitat for Dolores rushpink. How would livestock grazing impact BLM State Sensitive Plant Specie (Dolores rushpink) and its habitat?

1.8.5 Vegetation

- How would livestock grazing impact vegetation on these allotments?
- How would changing existing grazing scheme impact the vegetation within the Sand Flats West Pasture and Sand Flats East of the Sand Flats Allotment?

1.8.6 Wetlands/Riparian Zones

- How would livestock grazing impact riparian zones?

1.9 Summary

This chapter has presented the purpose and need of the proposed project, as well as the relevant issues, i.e., those elements of the human environment that could be affected by the implementation of the proposed project. In order to meet the purpose and need of the proposed

project in a way that resolves the issues, the BLM has considered and/or developed a range of action alternatives. These alternatives are presented in Chapter 2. The potential environmental impacts or consequences resulting from the implementation of each alternative considered in detail are analyzed in Chapter 4 for each of the identified issues.

2.0 DESCRIPTION OF ALTERNATIVES, INCLUDING PROPOSED ACTION

2.1 Introduction

Issues identified during external and internal scoping of the grazing permit renewal warranted the development of two alternatives to the no action alternative. Therefore, there are three alternatives analyzed in this EA, The proposed action, the no action alternative, and no grazing alternative. Alternatives considered but eliminated from further analysis are presented in Section 2.5 of this EA. Below is a brief summary of each alternative considered for analysis.

Alternative A – Proposed Action: 1) The season of use for Sand Flats Allotment would be November 1 to May 31, Scharf Mesa Allotment season of use would be from December 1 to March 31 and Hotel Mesa Allotment season of use would be from January 1 to April 30. 2) The class of livestock for these allotments would be cattle and AUMs would be 1,234 AUMs for Sand Flats Allotment, 312 AUMs for Scharf Mesa Allotment and 174 AUMs for Hotel Mesa Allotment. 3) Developing a Sand Flats, Scharf Mesa and Hotel Mesa AMP that includes resting pastures and allotments in the spring. 4) Renewing the remaining aspects of the grazing permit with new terms and conditions, including those from the 2008 RMP.

Alternative B – No Action: Renew the current permit for a term of 10 years with the same terms and conditions as the existing permit.

Alternative C – No Grazing: Do not authorize grazing on the Sand Flats, Scharf Mesa and Hotel Mesa Allotments for a period of ten years.

The alternatives are discussed at length in the sections that follow.

2.2 Alternative A – Proposed Action

The proposed action is a renewal of a grazing permit for a period of ten years (refer to Table 3) on the Sand Flats, Scharf Mesa and Hotel Mesa Allotments for livestock grazing on BLM managed lands. Sand Flats Allotment would reduce the season of use by one month. The proposed action would serve as the functional equivalent of an AMP for these allotments as described in 43 CFR 4120.2. Sand Flats, Scharf Mesa and Hotel Mesa Allotments would operate under this new grazing schedule (refer to Table 4) which is designed to allow for spring grazing while increasing the desired plant species within these allotments.

Authorized use would continue to be adjusted annually, as needed, based upon annual climatic conditions, forage production and plant vigor.

Upon approval, the 10-year grazing permit would be renewed for Sand Flats, Scharf Mesa and Hotel Mesa Allotments and the current permit under FLPMA, 1979 would be canceled.

Resource Objectives

- 1) Within Sand Flats Allotment improve the desired plant species within Sand Flats West Pasture on 300 acres and Sand Flats East Pasture on 180 acres which are functioning-at-risk.
- 2) Continue to meet all standards within these allotments.
- 3) Maintain or improve frequency, diversity, density, age classes, and productivity of desired species necessary to ensure reproductive capability and survival of the desired plant species to continue to meet Range Health Standard #3 within these Allotments.
- 4) Within Sand Flats, Scharf Mesa and Hotel Mesa Allotments continue to improve and maintain riparian areas in properly functioning condition (PFC).

Grazing Practices to meet resource objectives:

Authorize cattle grazing during the season of use and with the number of AUMs identified in Table 3 with adherence to the new terms and conditions of the grazing permit.

Table 3: Grazing use to be authorized under the Proposed Action Alternative

Allotment Name and Number	Livestock			Active Permitted Use (AUMs)	Acres	Land Status
	No.	Kind	Season of Use			
Sand Flats 00013	188	Cattle	11/01 to 05/31	1234*	31,754 1,446 597	BLM State Private
Scharf Mesa 05849	78	Cattle	12/01 to 03/31	312	9,478	BLM
Hotel Mesa 05850	44	Cattle	01/01 to 04/30	174	2,642 422	BLM Private

*The permittees for the Sand Flats Allotment has 1,234 active AUMs of permitted use on BLM and 94% public lands or 74 AUMs on State lands.

Improved management of the Sand Flats, Scharf Mesa and Hotel Mesa Allotments would be achieved through a grazing management system within Sand Flats, Scharf Mesa and Hotel Mesa Allotments which also incorporates the use of eight pastures in Sand Flats Allotment (refer to Allotment Map #10 in Appendix B). This proposed fall, winter and spring cattle grazing on Sand Flats Allotment would be managed as a six pasture grazing system between November 1 to May 31, Scharf Mesa Allotment would use the grazing system between December 1 to March 31 and Hotel Mesa Allotment would use in the grazing system between January 1 to April 30. There would be new terms and conditions of a new ten year grazing permit as described in Table 3 and 4.

Table 4: Proposed Grazing Schedule for Sand Flats, Scharf Mesa and Hotel Mesa Allotments.

	Allotment	Pasture	Grazing Season						
	Sand Flats		Nov. 1	Dec.	Jan.	Feb.	Mar.	Apr	May 31
		Sand Flats East	Graze (11/01 to 02/28)				Rested (03/01 to 05/31)		
		Sand Flats West	Graze (11/01 to 05/31)						
		Knowles	Graze (11/01 to 02/28)				Rested (03/01 to 05/31)		

Year 1	Allotment	Cow Creek/Sand Blast	Graze (11/01 to 05/31)								
		**Hotel Mesa/Lake Bottom	Graze (11/01 to 05/31)								
		*Buckhorn	Graze (11/01 to 03/15)								
	Hotel Mesa Allotment		Grazing Season								
			Jan. 1		Feb.		Mar.		Apr. 30		
			Graze (01/01 to 04/30)								
	Scharf Mesa Allotment		Grazing Season								
Dec. 1			Jan.		Feb.		Mar. 31				
Graze (12/01 to 03/31)											
	Allotment	Pasture	Grazing Season								
Year 2	Sand Flats Allotment		Nov. 1	Dec.	Jan.	Feb.	Mar.	Apr.	May 31		
		Sand Flats East	Graze (11/01 to 05/31)								
		Sand Flats West	Graze (11/01 to 05/31)								
		Knowles	Graze (11/01 to 05/31)								
		Cow Creek/Sand Blast	Graze (11/01 to 02/28)					Rested (03/01 to 05/31)			
		**Hotel Mesa/Lake Bottom	Graze (11/01 to 05/31)								
		*Buckhorn	Graze (11/01 to 03/15)								
	Hotel Mesa Allotment		Grazing Season								
			Jan. 1		Feb.		Mar.		Apr. 30		
			Graze (01/01 to 04/30)								
	Scharf Mesa Allotment		Grazing Season								
			Dec. 1		Jan.		Feb.		Mar.31		
Graze (12/01 to 03/31)											
	Allotment	Pasture	Grazing Season								
Year 3	Sand Flats Allotment		Nov. 1	Dec.	Jan.	Feb.	Mar.	Apr.	May 31		
		Sand Flats East	Graze (11/01 to 05/31)								
		Sand Flats West	Graze (11/01 to 02/28)					Rested (03/01 to 05/31)			
		Knowles	Graze (11/01 to 05/31)								
		Cow Creek/Sand Blast	Graze (11/01 to 05/31)								
		**Hotel Mesa/Lake Bottom	Graze (11/01 to 05/31)								
		*Buckhorn	Graze (11/01 to 03/15)								
Hotel Mesa Allotment		Grazing Season									
		Jan. 1		Feb.			Mar.		Apr. 30		
		Graze (01/01 to 02/28)					Rested (03/01 to 04/30)				
		Grazing Season									
		Dec. 1		Jan.			Feb.		Mar. 31		
Scharf Mesa Allotment		Graze (12/01 to 03/31)									
		Grazing Season									
		Grazing Season									
		Dec. 1		Jan.			Feb.		Mar. 31		
		Graze (12/01 to 03/31)									
	Allotment	Pasture	Grazing Season								
Year 4	Sand Flats Allotment		Nov. 1	Dec.	Jan.	Feb.	Mar.	Apr.	May 31		
		Sand Flats West	Graze (11/01 to 05/31)								
		Sand Flats East	Graze (11/01 to 05/31)								
		Knowles	Graze (11/01 to 05/31)								
		Cow Creek/Sand Blast	Graze (11/01 to 05/31)								
		**Hotel Mesa/Lake Bottom	Graze (11/01 to 02/28)					Rested (03/01 to 5/31)			
		*Buckhorn	Graze (11/01 to 03/15)								
	Hotel Mesa Allotment		Grazing Season								
			Jan. 1		Feb.			Mar.		Apr.30	
			Graze (01/01 to 04/30)								
	Scharf Mesa Allotment		Grazing Season								
			Grazing Season								
			Dec. 1		Jan.			Feb.		Mar. 31	
			Graze (12/01 to 03/31)								
			Graze (12/01 to 03/31)								

*Due to the lack of water within the Buckhorn Pasture. This pasture would be grazed by livestock from November 1st to March 15th.

**There is a small pasture (Lake Bottom Pasture) within the Hotel Mesa Pasture which will be rested each year from May 1 to May 31 due to Yellow-billed Cuckoo habitat and population.

Normal flexibility for the Sand Flats, Hotel Mesa and Scharf Mesa Allotments grazing schedule (refer to Proposed Grazing Schedule (Hotel Mesa, Scharf Mesa and Sand Flats Allotment Map #10 in Appendix A):

- Any date specified in the grazing system may be varied by 15 days except for the closing date (May 31st for Sand Flats Allotment, March 31st for Scharf Mesa Allotment and April 30th for Hotel Mesa Allotment).

- Trailing use in Sand Flats Allotment within Sand Flats East Pasture, Cow Creek/Sand Blast Pastures, Buckhorn Pasture, and Hotel Mesa Pasture would be for only one day each time cattle are trailed through these pastures.
- Trailing use in Scharf Mesa Allotment would be for only one day each time cattle are trailed through this allotment.
- The number of cattle may be increased by 20% for a shorter time period provided active AUMs authorized for the allotment are not exceeded.

There is a need for flexibility beyond the authorized use in the Sand Flats, Scharf Mesa and Hotel Mesa AMP. The following are situations that may necessitate a change from the normal grazing schedule for these allotments; however, such a change must be approved by an authorized BLM official:

- Fire damage to grazing area
- Emergency stabilization and rehabilitation activities following wildland fire
- Any land treatment areas within these allotments
- Flood damage to fences and/or facilities
- Poisonous plant occurrence
- Drought, excessive snow, lack of forage, or lack of stock water

Monitoring Plan

Monitoring in the Moab Field Office (MFO) is conducted following guidance in the Draft Utah Monitoring Manual for Upland Rangelands. The Sand Flats, Scharf Mesa and Hotel Mesa Allotments have recently been converted to nested frequency and line point intercept for long term trend monitoring. The base line data was collected in 2012 and the next monitoring is scheduled for Sand Flats Allotment is 2016 and every four years thereafter. The next cycle for monitoring Scharf Mesa Allotment is 2016 and every 5 years thereafter and Hotel Mesa Allotment is scheduled for 2016 and every eight years thereafter or earlier if needed. Objectives would be established after the second reading. This monitoring would be used to determine if grazing management needs to be adjusted during the term of the permit. Future monitoring and utilization limits would be used to identify any additional adjustments to stocking rates of individual pastures and/or allotments.

2.2.1 Terms and Conditions

The following items would be included in the terms and conditions of the ten year permit. The terms and conditions of the grazing permit may be modified if additional information indicates that a revision is necessary to conform to the grazing regulations in 43 CFR Part 4100.

- An actual use grazing report must be submitted to the BLM within 15 days after the end of the grazing use period. Failure to file an actual use report may result in future grazing authorizations being withheld.
- Grazing would conform to the proposed action which serves as the functional equivalent of an AMP for the Sand Flats, Scharf Mesa and Hotel Mesa Allotments.

- Feeding protein supplements, salt-grain mixture, hay (must be certified weed free hay), and/or other roughage on public lands is prohibited without prior authorization. Protein blocks, and mineral supplements would be placed in outlying areas as necessary to help distribute livestock. These areas must be at least ½ mile from water sources.
- Range improvements assigned in cooperative agreements and range improvement permits must be maintained in a usable condition prior to livestock use each year. Construction of new range improvements on BLM lands is prohibited without approval from the authorized officer. Maintenance would be in accordance with cooperative agreements and/or range improvement permits. Failure to maintain assigned projects in a satisfactory condition may result in withholding authorization to graze livestock until maintenance is completed.
- Equipment used to maintain range improvements would have dirt and debris cleaned from the undercarriage and moving parts to prevent the spread of noxious/invasive plants.
- As specified in the Moab Resource Management Plan (2008), moderate utilization levels (40 percent to 60 percent) would be used to indicate if general management objectives can be met. Utilization levels above those identified as appropriate would be used to adjust livestock use on a yearly basis, and including possible early removal from the pasture or allotments as needed. The majority of the allotments would meet utilization standards with the exception of livestock concentration areas such as water developments, along fences and mineral/salt/protein supplement locations.

2.3 Alternative B – No Action

The existing permit was issued on August 31, 2015 for the term of August 31, 2015 to July 31, 2025, under the authority of Section 402 (c) (2) of FLPMA, 1976 as amended, and contains the same terms and conditions as the previous permit or lease.

Under the no action alternative, the BLM would renew the permit. The permittees would operate as currently authorized, with the current grazing numbers, AUMs, season of use and the current terms and conditions.

Renew the current permit for a term of 10 years with the same terms and conditions as the existing permit.

Ground disturbing actions for any new range projects would continue to require cultural inventories. Such protection measures are routine and mandatory procedures under the Programmatic Memorandum of Agreement, 1980 (PMOA). Authorized use would continue to be adjusted, as needed, based upon annual climatic conditions, forage production and plant vigor.

Authorize cattle grazing during the season of use and with the number of AUMs identified in Table 5 with adherence to the existing terms and conditions of the grazing permit identified in Section 2.3.1.

Table 5: Current Grazing Use Authorization

Allotment Name and Number	Livestock			Active Permitted Use (AUMs)	Acres	Land Status
	No.	Kind	Season of Use			
Sand Flats 00013	164	Cattle	10/01 to 05/31	1234*	31,754 1,446 597	BLM State Private
Scharf Mesa 05849	78	Cattle	12/01 to 03/31	312	9,478	BLM
Hotel Mesa 05850	44	Cattle	01/01 to 04/30	174	2,642 422	BLM Private

*The permittees for the Sand Flats Allotment has 1,234 active AUMs of permitted use on BLM and 94% public lands or 74AUMs on State lands.

There is a need for flexibility beyond the authorized use in the Sand Flats, Scharf Mesa and Hotel Mesa Allotments. The following are situations that may necessitate a change from the normal grazing schedule for these allotments; however, such a change must be approved by an authorized BLM official:

- Fire damage to grazing area
- Emergency stabilization and rehabilitation activities following wildland fire
- Flood damage to fences and/or facilities
- Poisonous plant occurrence
- Drought, excessive snow, lack of forage, or lack of stock water
- Adjustment in herd numbers and shorter season of use as long as the active AUMs are not exceeded

2.3.1 Existing Terms and Conditions

The following items are included in the terms and conditions of the current ten year permit and would be carried into the new permit under Alternative B. The terms and conditions of the grazing permit may be modified if additional information indicates that a revision is necessary to conform to the grazing regulations in 43 CFR 4100.

- Supplemental feeding without written authorization is prohibited.
- The requirement to maintain assigned range improvements is a condition of this permit.
- An actual use report is due 15 days following grazing use.

2.4 Alternative C – No Grazing

This alternative is designed to give the desired plant community the opportunity to improve in vigor, density, and cover more quickly than other alternatives. No grazing means that livestock grazing would not be permitted within the Sand Flats, Scharf Mesa and Hotel Mesa Allotments for a period of ten years. The ten year period constitutes one permit cycle.

Grazing would be eliminated for ten years and the current grazing permit would be cancelled. In accordance with BLM regulation (43 CFR 4110.4-2(2) (b)), grazing would cease two years after

prior notification of the decision to cancel the permit. Allotment management would not change during this two-year interval from the currently authorized management (see Alternative B – No Action for the currently authorized management). The preference for the allotment would continue to be tied to the base property on the currently authorized permit. The current permittees would hold the preference for livestock use on these allotments if, after the ten year period BLM decided to renew the permit (as long as the permittees owns or controls the base property).

2.5 Alternative Considered, but Eliminated from further Analysis

2.5.1 Increase the Authorized AUMs on the Sand Flats, Scharf Mesa and Hotel Mesa Allotments

The permittees have not requested to analyze and increase in authorized AUMs. At the present time permittees has not grazed full active preference. It is unknown whether these allotments could support an increase in AUMs.

2.5.2 Convert the Sand Flats, Scharf Mesa and Hotel Mesa Allotments with Cattle and Sheep

The conversion of cattle to sheep or the permitting of sheep grazing within recognized bighorn sheep habitat is not supported by the 2008 Moab RMP. The Moab BLM has already decided in GRA-8, WL-28 and WL-33 where the Moab BLM would not permit the conversion of cattle to sheep or common use of both livestock (cattle and sheep) in recognized bighorn sheep habitat. The permittees have not requested to change the Sand Flats, Scharf Mesa and Hotel Mesa Allotments to common allotments that authorizes both cattle and sheep grazing.

3.0 AFFECTED ENVIRONMENT

3.1 Introduction

This chapter presents the potentially affected existing environment (i.e., the physical, biological, social, and economic values and resources) of the impact area as identified in the Interdisciplinary Team Checklist found in Appendix A and presented in Chapter 1 of this EA. This chapter provides the baseline for comparison of impacts/consequences described in Chapter 4.

3.2 General Setting

The Sand Flats, Scharf Mesa and Hotel Mesa Allotments are desert allotments located within the Dolores Triangle in Utah. Sand Flats, Scharf Mesa and Hotel Mesa Allotments are approximately 17 to 19 miles northeast of Moab, Utah. These allotments are within Grand County in the State of Utah.

The Sand Flats Allotment contains State Institutional Trust Land (SITLA) parcels comprising approximately 4 percent of the total acres and private land comprising approximately 2 percent

of the total acres. Hotel Mesa Allotment contains private land comprising approximately 14 percent of the total acres. Scharf Mesa Allotment comprising 100 percent BLM acres. Maps of these allotments are attached in Appendix B – Allotment Maps #1, #2 and #3. Tables 6 show the acreage and current active Federal AUMs and suspended AUMs within each allotment:

Table 6 Acreage and Current Active Federal AUMs and Suspended AUMs

Allotment	BLM Acres	Active AUMs	Suspended AUMs
Sand Flats	31,754	1,234	1,823
Scharf Mesa	9,478	312	0
Hotel Mesa	2,642	174	0

With enactment of the TGA in 1934, grazing allotments were created and the number and kind of livestock and season of use were established for the area. In 1946, the Grazing Service and General Land Office were combined and the BLM was established. In the 1950's and 1960's range surveys were completed on the public lands to determine the amount of forage being produced. Following these surveys, grazing capacity for the allotments was adjudicated. The number of livestock authorized on most allotments was decreased to facilitate meeting management objectives. The number of livestock in Grand County decreased significantly from the early 1900's to the present day. The landscape that includes these allotments was historically grazed heavily by cattle and sheep. Small railroad towns with shearing stations (Westwater, Agate, Cisco, Thompson, etc.), emerged throughout the landscape around the middle of the 1800's, lasted several decades and began to dissolve as the socioeconomic structure of the West shifted. However, during this time the rangelands were grazed without grazing management practices, which specifically deal with immediate and long term ecological effects from different patterns of use.

Scattered across these allotments are range improvements that were implemented to improve range conditions. These improvements consist of fencing (to control the livestock and keep them within a given area), cattleguards (to allow for easier recreational access), and water developments (reservoirs, spring developments, to distribute livestock over a broader area and reduce livestock pressure on natural water sources).

Geographically, the area of the proposed action is part of the Colorado Plateau physiographic province. The area in general is mainly situated within the eolian and residuum soil deposits of other sandstone formations. Soils vary from coarse sands, fine sandy loams, gravelly sandy loams, clay, silty clay loam and loams (refer to Appendix B: Soil Maps #4, 5 and 6). Topography for the Sand Flats Allotment is mostly level to rolling terrain with deep canyon bottoms, benches and mesa tops. Topography for Scharf Mesa and Hotel Mesa Allotments are mostly level to rolling terrain, benches and few small mesa tops.

A majority of the Sand Flats, Scharf Mesa and Hotel Mesa Allotments are within the salt desert shrub communities (refer to Appendix B, Vegetation Maps #7, 8 and 9). The upland vegetative communities are comprised primarily of salt desert-shrub species such as blackbrush, shadscale, and four-winged saltbush; with other shrub species such as Mormon tea, Wyoming sagebrush, winterfat, spiny Hopsage, Mexican cliffrose and sand sagebrush. The primary grasses are Indian ricegrass, galleta grass, sand dropseed grass, needle & thread grass, and many other minor plant

species. There are large areas of these allotments are blackbrush communities with scatter woodlands which are made up of Utah juniper and pinyon pine.

Surface waters for these allotments drain into the Dolores River and Colorado River via a series of desert washes. There are six perennial water sources within the Sand Flats Allotment, one perennial water source within the Scharf Mesa Allotment and two perennial water sources within the Hotel Mesa Allotment.

The climate is characterized by cold winters, hot summers and with a range of 7-18 inches of annual precipitation within the Sand Flats, Scharf Mesa and Hotel Mesa Allotments. Elevation ranges from approximately 4,130 feet along the Colorado River to 6,100 feet in near the Utah/Colorado Border line within the Sand Flats Allotment. Elevation within Scharf Mesa Allotment ranges from 4,200 along the Dolores River to 6,200 feet in the eastern portion of the allotment. Hotel Mesa Allotment ranges from 4,200 along the Colorado River to 4,600 feet in the eastern portion of the allotment. Most precipitation falls during spring, late summer and winter months within these allotments. Soil erosion occurs mainly during summer thunderstorm events, as these are usually high intensity and short duration storms. Precipitation records for these allotments are available from three local rain gauges (refer to Appendix C-Precipitation Data): 1) the Dolores Triangle rain gauge which was established in 1986 (elevation of 6,000 feet) which is located within the Scharf Mesa Allotment, 2) the Sand Flats (Dolores Triangle) rain gauge which was established in 1989 (elevation of 4,400 feet) which is located within the Sand Flats Allotment, and the Jay Van Loan rain gauge which was established in 1968 (elevation of 6,400 feet) is ¼ mile east of the Sand Flats Allotment. Dolores Triangle and Sand Flats Rain gauges are read quarterly each year by season. Jay Van Loan rain gauge is read monthly each year. The average annual precipitation for the period of record at the Dolores Triangle rain gauge is 11.92 inches; Sand Flats (Dolores Triangle) rain gauge is 9.29 inches, and Jay Van Loan rain gauge is 15 inches. There have been several droughts on record, namely 1999-00, 2001-02, 2008-09 and 2011-12.

These allotments contain habitat for both game and nongame wildlife species. Mesa and cliff faces in general, also provide habitat to raptors and other birds.

Historic cultural uses of the area include approximately 100+ years of range use by livestock ranching. Livestock ranching was once a major part of the local traditions and economic enterprise; however, the social and economic emphasis of Grand County is currently based on tourism and recreation. Ranching now plays a minor role in the areas social-economic atmosphere.

3.3 Issues Brought Forward for Analysis

All the issues brought forward were listed in Chapter 1 and are discussed in the chapter below. As identified in Appendix A- Interdisciplinary Team Checklist, the following resources or uses were identified as having the potential to be impacted are: 1) Livestock Grazing, 2) Soils, 3) Threatened and Endangered Species or State Sensitive Animal Species, Migratory Birds and Fish and Wildlife, 4) Threatened and Endangered or BLM Sensitive Plant Species 5) Vegetation, and

6) Wetlands/Riparian zones. These resources are carried forward for analysis in Chapter 4 “Environmental Consequences”.

3.3.1 Livestock Grazing

The Sand Flats Allotment currently contains eight pastures: Sand Flats West, Sand Flats East, Knowles, Cow Creek, Sand Blast, Buckhorn, Lake Bottom, and Hotel Mesa. Permittees rotate cattle through a series of pastures and allotments during a calendar period.

Table 7: Active AUMs, Season of Use and Number of Livestock Currently Authorized

Allotment	Number & Class of Livestock	Season of Use	% Public Land	Active AUMs	Suspended AUMs
Sand Flats	164 Cattle	10/01 to 05/31	94%	1,234	1,823
Scharf Mesa	78 Cattle	12/01 to 04/31	100%	312	0
Hotel Mesa	44 Cattle	01/01 to 04/30	100%	174	0

Range Improvements

Livestock grazing use depends upon construction and maintenance of ponds and springs for water sources. Storm runoff flow events are occasional, small and may not fill the stock ponds regularly. Springs are more dependable source of water and are regularly maintained to ensure adequate water flow and storage. Fences are installed to help restrict livestock to the permitted use areas.

Table 8: Existing Range Improvements on BLM Lands

Allotment	Ponds	Springs	Cattleguards	Fences	Corrals
Sand Flats	18	0	9	10.25 miles	1
Scharf Mesa	5	1	2	5.25 miles	0
Hotel Mesa	4	0	1	2.5 miles	0

3.3.2 Soils

Sensitive soils are defined as soils having characteristics that make them extremely susceptible to impacts or difficult to reclaim or restore after disturbance. They include soils that have high water or wind erosion, are saline or sodic, are droughty or have limitations to grazing, low nutrient levels, or very steep slopes (RMP October 2008).

Biotic Soil Crust

Biological soil crusts are found within portions of these allotments in association with the pinyon juniper and near rock outcrops. Biological soil crusts are important for surface stability.

Biological soil crusts are not commonly found on deeper well drained soils with sandy surface textures or heavy clay. Biotic soil crusts are an important component for soil stability in this area, and help reduce wind and water erosion. Biological soil crusts consist of diverse cyanobacteria, algae, lichens and mosses. The biological soil crusts provide healthy nutrient cycling, increasing plant production, which decrease sediment movement and erosion.

Biological soils crusts have an important function in this region, providing important ground cover and nutrient cycling (BLM TR 1730-2).

Sand Flats Allotment

According to the Canyonland Area, Utah, parts of Grand and San Juan Counties survey (USDA, 1980), there are eleven primary soil types and twelve minor soil types throughout this allotment (refer to Appendix B, Map #4).

This allotment contains sensitive soils including soils with moderate or high wind erosion ratings, moderate salinity levels, steep slopes and large rock outcrop areas. Over 10% of the allotment is covered by soils with high wind erosion ratings (WEG=1 or 2) and 20% of the allotment is covered by soils with moderate wind erosion ratings (WEG=3 or 4). Over 2,000 acres of soils within the allotment have moderate salinity levels. Approximately 20% of the allotment is limited for grazing use because of large rock outcrop areas with low production and no vegetation to sparse vegetation.

Scharf Mesa Allotment

There are 10 different soil units in the allotment, with more than half the allotment involving one soil unit (#71- Rizno dry rock outcrop complex, 3-15% slopes). The majority of soil types in this allotment include large rock outcrop components.

One soil unit (#2- Badland) is considered to be sensitive in nature, or is “more sensitive to surface disturbance and is at risk for site degradation” (RMP page 4-282). The Badlands soils support very sparse vegetation such as shadscale and annual forbs. They have very high runoff rates and high erosion rates.

Hotel Mesa Allotment

There are 9 different soil units in this allotment, with about 30% of the allotment being rock outcrop. There are several small areas with moderately saline soils and several small areas with high water erosion ratings as they are located within the Colorado River floodplain and on steep rocky slopes.

Utah’s Standards for Rangeland Health

The evaluations conducted on the Sand Flats, Scharf Mesa and Hotel Mesa Allotments found that the upland soils standards(#1) are being met with the exception of one small area within the Sand Flats East Pasture and two small areas within the Sand Flats West Pasture. The areas that is not meeting Standard 1 item a, are approximately 180 acres in Sand Flats East Pasture and 140 acres in Sand Flats West Pasture and item c, are approximately 180 acres in Sand Flats East Pasture and approximately 300 acres within Sand Flats West Pasture which is less than 1½ percent of the Sand Flats Allotment. The detailed evaluation of Utah’s Standards for Rangeland Health can be found in Appendix D.

3.3.3 Threatened and Endangered Species, State Sensitive Species, Migratory Birds and Wildlife

Threatened, Endangered, or Candidate Animal Species

Species listed as threatened or endangered are afforded protection under the Endangered Species Act (ESA). The BLM is required to consult with the U.S. Fish and Wildlife Service (USFWS) on potential impacts to federally listed species. A total of seven federally listed species were identified as having the potential to occur within the Project Area and be impacted by project activities. These species are noted in Table 9 and will be analyzed. These include three terrestrial species and four aquatic species. Discussions of each species follow:

Table 9: Federally Listed Species with Potential Habitat within the Moab Field Office

Common Name (<i>Scientific Name</i>)	Habitat	Status	Designated Critical Habitat in Project Area	Potential for Occupancy in Project Area	Further Analysis (Yes/No)
California Condor (<i>Gymnogyps californianus</i>)	Roosts and nests in cliff habitat. Forages in open areas.	Endangered, Experimental	None	Very low-migrant only-no analysis will be presented	No
Gunnison Sagegrouse (<i>Centrocercus minimus</i>)	Prefers sagebrush and sagebrush/grassland habitats.	Threatened	No	No Occupancy or Habitat- no analysis will be presented	No
Mexican spotted owl (<i>Strix occidentalis lucida</i>)	Steep rocky canyons.	Threatened	No	No Occupancy/ Suitable Habitat	Yes
Southwestern willow flycatcher (<i>Empidonax traillii extimus</i>)	Low scrub, thickets, or groves of small trees, often near watercourses.	Endangered	Yes	Moderate-migrant only, no nesting	Yes
Western yellowbilled cuckoo (<i>Coccyzus americanus occidentalis</i>)	Riparian Areas	Threatened	Yes	Unknown Occupancy - Limited nesting/suitable Migratory Habitat	Yes
Bonytail (<i>Gila elegans</i>)	Eddies, pools, and backwaters near swift current in large rivers	Endangered	Yes	Very low potential for occurrence	Yes
Colorado pikeminnow (<i>Ptychocheilus lucius</i>)	Adults can be found in habitats ranging from deep turbid rapids to flooded lowlands. Young prefer slow-moving backwaters	Endangered	Yes	Known occupancy	Yes
Humpback chub (<i>Gila cypha</i>)	Fast, deep, whitewater areas	Endangered	Yes	Low numbers of stocked fish	Yes

Common Name (<i>Scientific Name</i>)	Habitat	Status	Designated Critical Habitat in Project Area	Potential for Occupancy in Project Area	Further Analysis (Yes/No)
Razorback sucker (<i>Xyrauchen texanus</i>)	Slow backwater habitats and impoundments	Endangered	Yes	Known occupancy	Yes

The public lands within the Hotel Mesa Allotment include proposed critical habitat for the Yellow-billed cuckoo and the Sand Flats and Hotel Mesa Allotment include critical habitat for the Colorado River Endangered Fish as designated by the U.S Fish and Wildlife Service (USFWS). The proposed action and other alternatives are in an area with potential habitat for the Mexican spotted owl and the Southwestern willow flycatcher.

Mexican Spotted Owl (MSO)

Steep slopes and canyons with rocky cliffs characterize much of the Mexican spotted owl (MSO) habitat in Utah. Within the Colorado Plateau, MSO are known to nest in steep-walled canyon complexes and rocky canyon habitat within desert scrub vegetation. Nesting and breeding begins in March, and eggs are laid in late March or early April and incubated for approximately 30 days. The eggs usually hatch in early May. Nesting MSO fledge from early to mid-June and disperse out of the natal area in the fall. The MSO exists in small isolated subpopulations and is threatened by habitat loss and disturbance from recreation, improper grazing practices, road development, catastrophic fire, timber harvest, and mineral development.

The Moab FO has initiated a habitat assessment program to identify and survey suitable habitats within the MFO. Habitat evaluation areas are identified using the 1997 Spotskey-Willey MSO Habitat Model that identifies potential foraging and breeding habitats and the 1999 Spotskey-Willey MSO Habitat Models that focus exclusively to canyon terrain, with an emphasis on canyons with a mesic component and complex sub-strata, the “2x2 Rule” developed by the Service to identify canyons with complexity and anecdotal knowledge of potential MSO habitat. Additionally, evaluations are conducted in canyon areas that may not model strongly according to the aforementioned, but are comprised of the primary constituent elements for potential MSO occupation.

The entire project area has had some level of habitat assessment performed on all modeled habitats. Presence/absence surveys have been performed according to protocols established by the Service for the MSO within the Moab FO since 2001 in suitable habitats.

With the exception of the Colorado River corridor, the Sand Flats Allotment does not offer suitable MSO nesting habitat. The northeastern portion of the Knowles Pasture is bordered by suitable MSO habitats along the Colorado River corridor. The area has been evaluated and protocol surveyed in 2007/2008 and no owls were detected therefore this area is current for MSO absents. Within the Scharf Mesa Allotment suitable MSO habitat is found above Granite Creek. Occupancy surveys according to the USFWS protocol were performed in 2003, 2004, 2012 and 2013 and no owls were located. There is no suitable MSO habitat in the Hotel Mesa Allotment.

Southwestern Willow Flycatcher (SWFL)

The Southwestern willow flycatcher (SWFL) utilizes and breeds in patchy to dense riparian habitats along streams and wetlands near or adjacent to surface water or saturated soils. These dense patches are often interspersed with small openings, open water, and/or shorter/sparser vegetation, creating a mosaic habitat pattern. Population declines are attributed to numerous, complex, and interrelated factors such as habitat loss and modification, invasion of exotic plants into breeding habitat, brood parasitism by cowbirds, vulnerability of small population numbers, and winter and migration stress.

Currently all of the riparian habitats in the project area have been assessed for SWFL presence and the best habitats have been protocol surveys for SWFL occupancy. In 2006 by Bill Sloan with Canyonlands NPS conducted habitat evaluation on all potential riparian habitats within Sand Flats, Scharf Mesa and Hotel Mesa Allotment.

Within the Sand Flats, Scharf Mesa and Hotel Mesa Allotments potential and suitable breeding habitat is abundant along both the Colorado and the Dolores Rivers and there is isolated marginal breeding habitat in the lower fork of Coates Creek. All other drainages within the allotment interior do not offer habitats for SWFL use.

The Dolores River has had several surveys with many migrational SWFL detections over the past ten years, indicating these areas are used as migrational habitat. Survey performed near the state line and near the Dolores confluence both produced numerous SWFL migrant, therefore it can be assumed that there is a high potential for migrant SWFL detection along this reach of the Colorado River. All SWFL detections within the MFO have indicated early season migrate use in only the most suitable habitats along the Green, Colorado and Dolores Rivers. No nesting birds have ever been detected in the MFO and are not expected to nest in the MFO or the project area.

Yellow-billed Cuckoo

The Western Yellow-billed cuckoo (YBCU) is associated with cottonwoods and riparian cover, which provides nesting and brood-rearing habitat. Cuckoos are obligate riparian nesters and are restricted to more mesic habitat along rivers, streams, and other wetlands. The YBCU has been recently listed (November 2014) due to loss of riparian habitat from agricultural use, water use, road development and urban development. The MFO contains approximately 860 acres of designated critical habitat of which 230 acres are located on federal lands currently proposed by the Service along the Colorado River. No known nesting population of this species exists at present on federal lands within the MFO, but limited surveys for this species have identified several detections over the past ten years.

Adam Petry with Western Biology and in coordination with Southwest Research, Inc. (SWR) performed habitat suitability evaluations along the Colorado and Dolores rivers that border these allotments. It was determined that all allotments may offer some level of migratory habitats. Areas along the Colorado River and at the confluence of the Dolores River, where the USFWS has designated Critical Habitats for the YBCU, may offer limited foraging and nesting habitat within the Sand Flats and Hotel Mesa Allotments. No suitable foraging and nesting habitat exists in the Scharf Mesa Allotment.

Endangered Colorado River Fish within the Sand Flats and Hotel Mesa Allotments

There are currently four federally listed endangered fishes in the upper Colorado River: the Colorado pikeminnow (*Ptychocheilus lucius*), razorback sucker (*Xyrauchen texanus*), humpback chub (*Gila cypha*), and bonytail (*Gila elegans*). These fishes, once plentiful in reaches of the Colorado River in western Colorado and eastern Utah, have declined in distribution and abundance, due to competition with nonnative species (over 40 species of nonnative fish have been introduced into the upper Colorado River basin), reductions in the amount or quality of in-stream habitat, up-stream reservoirs and other water demands have altered the natural flow regime of the river. The combined effects of predation, competition, water resource development and alterations to the natural flow regime are thought to be key factors in the decline of these endangered fishes.

The backwaters of the Colorado River and the confluences of the Dolores and Colorado Rivers provide spawning and nursery habitat for the endangered Colorado River fish and other native and state sensitive fish. The timing for spawning, post-spawning, incubation, and fry stages of the fish is typically May through August. Critical habitat for the Colorado pikeminnow, razorback sucker, humpback chub and the bonytail chub can be found in waters associated with the Colorado River adjacent to the Sand Flats and Hotel Mesa Allotments. Viable populations of all four of the endangered fishes were once present in the lower Dolores River adjacent to the Sand Flats, Scharf Mesa, and Hotel Mesa Allotments, but upstream diversions eliminated most of the suitable habitat by reducing base flows and dewatering nursery habitats, contributing to the loss of these populations.

Bonytail Chub

A few remnant populations of bonytail chub, consisting of older adults, persist in reaches and major tributaries of the Green River and Colorado River, but no natural reproduction has been documented in the upper Colorado River basin since 1961. The species was listed as endangered in 1980 and is now considered functionally extinct in the wild by the U.S. Fish and Wildlife Service. Hatchery-reared bonytail chub are stocked in the Colorado River, and recent data collected at a passive integrate transponder antennae array by the Utah Division of Wildlife Resources (UDWR) indicate that hatchery-reared bonytail chub are also present in at least the lower 12 miles of the Dolores River (Keller and Hart 2013, 2014).

Humpback Chub

Five viable populations of humpback chub persist in the upper Colorado River basin. One of these populations is in the portion of the Colorado River that flows through Westwater Canyon, which borders the northern portion of the Sand Flats Allotment. Small numbers of humpback chub have been reported as far downstream as the Moab area (Tabata et al. 1965; Valdez and Clemmer 1982; Valdez and Muth 2005).

Colorado Pikeminnow

Viable populations of Colorado pikeminnow occupy about 25% of the historic range of the species in the upper Colorado River basin. Adult Colorado pikeminnow migrate long distances to spawn and can be found, on at least a seasonal basis, in virtually all reaches of the upper Colorado River (Tyus 1991; Valdez and Muth 2005). Colorado pikeminnow once inhabited the

Dolores River from the Colorado-Utah state line to the confluence with the Colorado River, but this population has apparently been extirpated (Valdez et al. 1992).

Razorback Sucker

Razorback suckers occur at low population densities in the Colorado River adjacent to the Sand Flats and Hotel Mesa Allotments. Most remaining populations consist primarily of old adults, but hatchery-reared razorback suckers are now stocked in the Colorado River in an effort to compensate for the poor juvenile recruitment that has occurred since the mid-20th Century when dams and diversions eliminated most suitable spawning and nursery habitat. Recent data collected at a passive integrate transponder antennae array by the Utah Division of Wildlife Resources (UDWR) documented the presence of hatchery-reared razorback suckers in the Dolores River at least 12 miles upstream from its confluence with the Colorado River, indicating that they are likely present in portions of the Dolores River adjacent to the Sand Flats, Scharf Mesa, and Hotel Mesa Allotments (Keller and Hart 2013, 2014).

Utah BLM Sensitive Species

Special Status Species Management Policy 6840 requires the BLM to manage State Sensitive Animal Species to prevent the need for future listing under the ESA. A total of 40 Utah State Sensitive Animal Species animals potentially occur within the MFO, seventeen (17) are either known to occur or the habitat is present for the species to potentially occur within the action area (UDWR, 2015), though six will not be impacted by the Proposed Action and will not be discussed further within this EA

The BLM maintains a list of sensitive species that may occur on BLM managed lands. The BLM Utah State director's Sensitive Species List includes those that are federally listed species that are listed in Table 9 and also those identified by the BLM and those listed as State sensitive by the State of Utah. The Utah state sensitive wildlife species (not including federally listed species) that have some potential to occur and be impacted by the Proposed Action are listed in Table 10. These species are either on the BLM Utah State director's Sensitive Species List or the UDWR's State Sensitive Species List. A brief description for wildlife species the will be further analyzed follows this table.

Table 10 Special Status Species in Utah

Common Name (<i>Scientific Name</i>)	Habitat	Habitat Value† and/or Known Occurrence in Project Area	Habitat Potential Within the Project Area that may be impacted Project Activities	Further Analysis (Yes/No)
Mammals				
Allen's big-eared bat (<i>Idionycteris phyllotis</i>)	Rocky and riparian areas in woodland and scrubland regions, roosts in caves or rock crevices.	Substantial Value†	Species may occur within the project area. Livestock activities typically occur during the day when bats are roosting; therefore no direct impacts will occur to bats that forage in the project area. Minimum site specific habitat	No
Big free-tailed bat (<i>Nyctinomops macrotis</i>)	Rocky and woodland habitats, roosts in caves, mines, old buildings, and rock crevices.	No Habitat†		No

Common Name (<i>Scientific Name</i>)	Habitat	Habitat Value† and/or Known Occurrence in Project Area	Habitat Potential Within the Project Area that may be impacted Project Activities	Further Analysis (Yes/No)
			alteration may occur but are not expected to reduce insect forage base. No impacts expected during roosting or to roosts.	
Fringed myotis (<i>Myotis thysanodes</i>)	Desert and woodland areas, roosts in caves, mines, and buildings.	Substantial Value†		No
Spotted bat (<i>Euderma maculatum</i>)	Found in a variety of habitats, ranging from deserts to forested mountains; roost and hibernate in caves and rock crevices.	Substantial Value†		No
Townsend's big-eared bat (<i>Corynorhinus townsendii</i>)	Occur in many types of habitat, but is often found near forested areas; roosts and hibernates in caves, mines, and buildings.	Limited Value†		No
Western Red Bat (<i>Lasiurus blossevillii</i>)	Found near water, often in wooded areas, extremely rare in Utah.	No Habitat†		No
Gunnison's prairie dog (<i>Cynomys gunnisoni</i>)	Grasslands, semidesert and montane shrublands	No Habitat†	No habitat in project area.	No
Kit fox (<i>Vulpes macrotis</i>)	Open prairie, plains, and desert habitats	No Habitat†	No known occupancy – limited potential for occurrence	No
White-tailed prairie dog (<i>Cynomys leucurus</i>)	Semi desert grasslands and open shrublands	No Habitat†	No suitable habitat in project area.	No
Birds				
Bald Eagle (<i>Haliaeetus leucocephalus</i>)	Roosts and nests in tall trees near bodies of water.	Winter † / Occupied Nesting	Four known nesting territories in or near project area, suitable nesting and winter habitat in project area	Yes
Bobolink (<i>Dolichonyx oryzivorus</i>)	Riparian or wetland areas.	No Habitat†	Rare migrant on BLM lands	No
Burrowing owl (<i>Athene cunicularia</i>)	Open grassland and prairies.	Primary Breeding†	No known occupancy, no suitable nesting habitat in project area due to lack of prairie dog activity.	No
Ferruginous hawk (<i>Buteo regalis</i>)	Flat and rolling terrain in grassland or shrub steppe; nests on elevated cliffs, buttes, or creek banks.	No Habitat†	No current nesting occurring in project areas, minimal historic sightings - limited potential for occurrence	No
Long-billed curlew (<i>Numenius americanus</i>)	Grassland/ herbaceous- nesting in mixed fields with adequate, but not tall, grass cover and fields with elevated points	No Habitat†	Minimum habitat and occurrence in the MFO.	No

Common Name (<i>Scientific Name</i>)	Habitat	Habitat Value† and/or Known Occurrence in Project Area	Habitat Potential Within the Project Area that may be impacted Project Activities	Further Analysis (Yes/No)
Short-eared owl (<i>Asio flammeus</i>)	Grasslands, shrublands, and other open habitats.	Winter †	Occasional winter resident, nesting does not occur in the MFO.	No
Fish				
Bluehead sucker (<i>Catostomus discobolus</i>)	Fast flowing water in high gradient reaches of mountain rivers	Tributaries of the Colorado and Green rivers	Known occupancy and high potential for habitat in vicinity of these allotments near the Colorado, Green and Dolores Rivers	Yes
Roundtail chub (<i>Gila robusta</i>)	Large rivers, and is most often found in murky pools near strong currents	Mainstream and tributaries of the Colorado and Green rivers		Yes
Flannelmouth sucker (<i>Catostomus latipinnis</i>)	Large rivers, where they are often found in deep pools of slow-flowing, low gradient reaches	Mainstream and tributaries of the Colorado and Green rivers		Yes

† Utah Conservation Data Center

Bald Eagle

Utah's wintering bald eagle population is typically found near rivers, lakes, and marshes where unfrozen, open waters offer the opportunity to prey on fish and waterfowl. The Colorado and Green River corridors are used frequently by Utah's wintering bald eagles. The eagles begin to arrive in November and head north by March. Utah also hosts a small population of desert bald eagles that can be found in desert valleys, far from any water. These eagles feed primarily on carrion. There are four active nests which occur on the Colorado River within the MFO. Two of these active bald eagle nesting territories are located within the Sand Flats Allotment and another across from Hotel Mesa Allotment, all adjacent to the Colorado River. There have been several nests utilized in this territory since it was first discovered in the 1980s. These nests have received documented use during the past several years and decades for two and the nesting territories are typically active each year. The entire river corridor adjacent to the Sand Flat and Hotel Mesa Allotments is essential to summer foraging habitats. There is the potential that eagles may use some of this area as winter foraging and the nesting pairs may also forage on uplands throughout this allotment during nesting season (January 1 to August 15).

Nesting bald eagles return to their nesting territories in early spring. Egg laying and incubation occurs from February through May with eaglets hatching during May and early June, and fledging by early July. The bald eagle continues to be protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection.

BLM Sensitive Fish Species

Sensitive species of fish in the Dolores River bordering the Sand Flats, Scharf Mesa, and Hotel Mesa Allotments include the roundtail chub (*Gila robusta*), bluehead sucker (*Catostomus discobolus*), and flannelmouth sucker (*Catostomus latipinnis*), which are collectively managed as

“the three species” under a range-wide conservation agreement (UDWR 2006). Each of the three species was historically widely distributed in rivers and lower elevation perennial streams in the upper Colorado River basin, but declined in abundance and distribution following widespread habitat alterations and introductions of nonnative fishes (Bezzarides and Bestgen 2002). Recent surveys conducted by the Utah Division of Wildlife Resources (Walker and Birdsey 2005; Keller and Hart 2013, 2014) indicate that each of the three species inhabits the reaches of the Dolores River adjacent to the three allotments. Flannelmouth suckers and bluehead suckers may also inhabit Granite Creek, a tributary to the Dolores River near the Scharf Mesa Allotment, but were not detected there in 2005 and no recent surveys have been conducted to determine if these populations persist. Viable populations of roundtail chub, bluehead suckers, and flannelmouth suckers are also present in the Colorado River bordering the Sand Flats and Hotel Mesa Allotments (Walker and Birdsey 2005).

Bluehead Sucker

The blueheaded sucker has been extirpated from 55 percent of its historical distribution. Within the MFO area, populations can be found in the mainstream rivers and tributaries to the headwater reaches of the Colorado and Green Rivers and in the Dolores River. Declines in populations are attributed to hybridization, altered hydrological regimes, in-stream habitat loss and degradation and predation of non-native fish (UDWR 2006).

Roundtail Chub

The roundtail chub has been extirpated from 45 percent of its historical distribution in the Colorado River Basin. Within the Project Area, populations are known to occur in the Colorado River from the Utah border to Moab and in the Green River from the Colorado Green confluence upstream to Echo Park. Declines in populations are attributed to hybridization with other chub, habitat loss and degradation due to dam and reservoir construction, competition and predation of non-natives, parasitism, and dewatering activities (UDWR 2006).

Flannelmouth Sucker

The flannelmouth sucker now occupies only 50 percent of its historical range within the Upper Colorado River Basin. Within the Project Area, populations are known to occur in the Colorado, Green and Dolores rivers. Populations have declined since the 1960s due to impoundment of the mainstream of the Green and Colorado rivers. (Flannelmouth Suckers have been extirpated from portions of the Gunnison River.) This fish is also susceptible to altered thermal and hydrological regimes, hybridization and competition of non-native fish (UDWR 2006).

Migratory Birds

A variety of migratory song bird species may use the Sand Flats, Scharf Mesa and Hotel Mesa Allotments for breeding, nesting, foraging, and migratory habitats. Migratory birds are protected under the Migratory Bird Treaty Act of 1918 (MBTA). Unless permitted by regulations, the MBTA makes it unlawful to pursue, hunt, kill, capture, possess, buy, sell, purchase, or barter any migratory bird, including the feathers or other parts, nests, eggs, or migratory bird products. In addition to the MBTA, Executive Order 13186 sets forth the responsibilities of Federal agencies to further implement the provisions of the MBTA by integrating bird conservation principles and

practices into agency activities and by ensuring that Federal actions evaluate the effects of actions and agency plans on migratory birds.

A Memorandum of Understanding (MOU) between the BLM and USFWS (BLM MOU WO-230-2010-04) provides direction for the management of migratory birds to promote their conservation. At the project level, the MOU direction includes evaluating the effects of the BLM's actions on migratory birds during the NEPA process; identify potential measurable negative effect on migratory bird populations, focusing first on species of concern, priority habitats, and key risk factors. In such situations, BLM would implement approaches to lessen potential take. Identifying species of concern, priority habitats, and key risk factors includes identifying species listed on the USFWS Birds of Conservation Concern (BCC) that are most likely to be present in the project area and evaluating and considering management objectives and recommendations for migratory birds resulting from comprehensive planning efforts, such as Utah Partners in Flight American Land Bird Conservation Plan. The Utah Partners in Flight (UPIF) Working Group completed a statewide avian conservation strategy identifying "priority species" for conservation due to declining abundance distribution, or vulnerability to various local and/or range-wide risk factors. One application of the strategy and priority list is to give these birds specific consideration when analyzing effects of proposed management actions and to implement recommended conservation measures where appropriate.

The UPIF Priority Species List, the BCC list for Region 16 (Colorado Plateau) and the Utah Conservation Data Center database were used to identify potential habitat for priority species that could utilize habitats within these allotments. Potential habitat and species are listed in Table 11 below.

Table 11: Migratory Bird Priority Species

Species	BCC§	PIF‡	DWR Habitat Value†	Breeding Habitat‡	Winter Habitat‡
Bald Eagle**	X		Winter	Lowland Riparian	Lowland Riparian
Black-throated Gray Warbler	X	X	Prime Breeding	Pinyon-Juniper	Migrant
Brewer Sparrow	X	X	High Value Habitat	Shrubsteppe/High Desert Scrub	Migrant
Broad-tailed Hummingbird		X	Critical/Substantial	Lowland Riparian	Migrant
Gambel's Quail		X	High	Low Desert Scrub	Low Desert Scrub
Golden Eagle	X		Critical/High	Cliff	High Desert Scrub
Gray Vireo	X	X	Prime Breeding	Pinyon – Juniper	-----
Juniper Titmouse	X		Critical/High	Pinyon-Juniper	Pinyon-Juniper
Peregrine Falcon	X		Critical	Cliff	Wetlands
Pinyon Jay	X		Critical/High	Pinyon-Juniper	Pinyon-Juniper

Species	BCC§	PIF‡	DWR Habitat Value†	Breeding Habitat‡	Winter Habitat‡
Prairie Falcon	X		Critical/High	Cliff	Agriculture
Sage Sparrow		X	Critical	Shrubsteppe	Low Desert Scrub
Southwestern Willow Flycatcher*	X		Local Migrant	Riparian	Migrant
Virginia's Warbler		X	Winter	N/A	Migrant
Yellow-billed Cuckoo*	X	X	Not Known	Lowland Riparian	Migrant

*Federally Listed species **State Sensitive Species §Birds of Conservation Concern 2008 (USFWS, 2008) † Utah Conservation Data Center ‡Utah Partners in Flight Avian Conservation Strategy Version 2.0.

Raptors and Eagles

Raptors and eagles typically use the same nest site year after year. Nesting and fledgling seasons for raptors vary but typically extend from March 1st through August 31st with eagles often beginning their nesting season in January. The Project Area also offers suitable wintering and migration habitats for several non-nesting raptor species. The U.S. Fish and Wildlife Service (USFWS) issued guidelines for the protection of raptors that includes species-specific timing limitations and spatial offsets to active nests (Romin and Muck 2002). These guidelines have been incorporated into the BLM RMP.

Additionally, the Bald and Golden Eagle Protection Act, which initially protected only bald eagles, was amended in 1962 to include the golden eagle because of its dwindling populations and similar appearance to bald eagles when both eagles are young. The act prohibits anyone from "taking" eagles, including their parts, nests, or eggs without a permit issued by the Secretary of the Interior. A taking also covers impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle's return, such alterations agitate or bother an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death, or nest abandonment.

General Wildlife

The plant communities, riparian, riverine habitats and topography in these allotments would provide habitat for various small mammals, songbirds, snakes, lizards and raptors species. Predator such as cougar, coyotes, bobcat and fox can also be found here. The most commonly observed species include gopher snakes, antelope ground squirrels, cottontail rabbits, black-tail jackrabbits, mourning doves, horned larks, and ravens. The Colorado and Dolores Rivers contains adequate or consistent flows to support warm water fishery potentials. The plant communities in these allotments would provide nesting habitat for various bird species.

Big Game Wildlife

The UDWR periodically reviews these habitat areas through coordination with the various land management agencies and updates these files as needed. The BLM works closely with the UDWR to ensure that big game habitats identified by the UDWR receive the needed

management prescriptions. Within the MFO, much of the deer and elk habitat overlaps and management prescriptions are often the same for both species.

Mule Deer and Elk Habitat

Portions of the Sand Flats and Scharf Mesa Allotments contain crucial deer and elk winter range habitat. Approximately 35,000 acres of winter range provides crucial winter forage and pinyon-juniper communities offer thermal cover during the winter months. The critical time frame for use in these areas is from mid-November through late April, depending on the severity of the winter. Deer typically utilize sagebrush, other brush species and available grasses during winter months while elk typically utilize available grasses, but would also make use of browse as needed during winter months and cattle prefer mainly grass species. During severe winters, deer and elk concentrate on lower elevation winter ranges for longer periods of time.

There is no crucial deer or elk winter range habitat within the Hotel Mesa Allotment. However, there are a few deer that make use of this allotment year round.

Mule Deer

Mule deer occupy most ecosystems in Utah but likely attain their greatest densities in shrublands on areas characterized by rough, broken terrain and abundant browse and cover. In the Rocky Mountains, winter diets for mule deer consist of approximately 75 percent browse from a variety of trees and shrubs and 15 percent forbs. Grasses make up the remaining ten percent of the diet during winter. In the spring, browse is 49 percent of the diet and grasses and forbs make up approximately 25 percent each. Summer diets are 50 percent browse, with forbs consumption increasing to 46 percent. Browse use increases again in the fall to approximately 60 percent of the mule deer diet, forb use declines to 30 percent, and grasses increase to ten percent (Fitzgerald et al. 1994).

Winter range habitat primarily consists of shrub-covered, south-facing slopes and often coincides with areas of concentrated human use and occupation. Winter range is often considered a limiting factor for mule deer in the Intermountain West. Because of learned behavioral use patterns passed on from one generation to the next, deer migrate for the winter into the same areas every year, regardless of forage availability or condition. These generally are areas with shallow snow depth, which allow easier movement, with pinion-juniper and sagebrush vegetation types. These vegetation types provide deer with both escape and thermal cover. Sagebrush is their primary forage during the winter season.

Since the large decline during winter 1992– 1993, the deer herd has shown an increasing trend. The population had good growth during the mid-late 1990s, but then declined during the severe drought years from 2000 to 2003 when fawn production was reduced. The harsh winters in northern Utah in 2007-2008 and in southern Utah in 2009-2010 lowered adult and fawn survival and also caused population declines. Despite these weather events, the deer population in Utah has grown at an average rate of 1.6 percent, over the past 20 years and is now at a level not seen since 1992. (UDWR 2014). Predation, while not within the BLM's jurisdiction, can also contribute to deer population declines.

Rocky Mountain Elk

The Rocky Mountain elk is considered a generalist feeder (Fitzgerald et al. 1994). Grasses and shrubs compose most of the winter diet, with the former being of primary importance in the spring months (Kufeld 1973). Forbs become increasingly important in late spring and summer, and grasses again dominate in the fall. These feeding relationships may change somewhat, depending on location. Associated with seasonal changes in diet are seasonal changes in habitat. The season and function of use of these habitats help distinguish various types of winter ranges, production areas (calving grounds), and/or summer range.

Typical Rocky Mountain elk winter range occurs between 5,500 and 7,500 feet elevation and comprises mountain shrub and sagebrush habitats. Crucial winter range is considered to be the part of the local deer and/or elk range where approximately 90 percent of the local population is located.

A majority of the elk in the La Sal wildlife management unit stay on private and USFS lands year-round; however, BLM lands do provide some winter range. Rocky Mountain elk population trends for the past seven years have been relatively stable. Although there has been variability between years overall the population is stable and near UDWR population objectives.

Desert Bighorn Sheep Habitat

Desert bighorn sheep are uniquely adapted to inhabit some of the most remote and rugged parts of the area. Desert bighorns are sometimes referred to as a wilderness species because of the steep rocky areas they occupy for escape and safety. Habitat is characterized by rugged terrain including canyons, gulches, talus cliffs, steep slopes, mountaintops, and river benches (Shakleton et al. 1999). Desert bighorn occurring in Southern Utah generally do not migrate

The State of Utah Division of Wildlife Resources (UDWR) and Moab RMP have identified approximately 5,680 acres of desert bighorn sheep habitat within the Sand Flats Allotment with the majority of this acreage in the Knowles Pasture. This area had desert bighorn re-introduced in the late 1970's and again in 1990 totaling 25 to 30 animals transplanted. This herd has struggled over the years and currently the UDWR estimates the population has remained at 25 animals. There is no bighorn habitat found in the Scharf Mesa and Hotel Mesa Allotments.

3.3.4 Threatened and Endangered Species and BLM State Sensitive Plant Species

Threatened, Endangered, or Candidate Plant Species

The Federal Endangered Species Act protects listed T&E species and their critical habitats. The BLM's Special Status Species Management Policy 6840 (6840 Manual Section) (Rel. 6-121) directs the BLM to identify and protect sensitive species and species identified as candidates for federal listing. Informal Section 7 Consultation with the United States Fish and Wildlife Service (USFWS) identified the species listed below with potential habitat within the Sand Flats, Scharf Mesa and Hotel Mesa Allotments. The BLM is required to consult with the U.S. Fish and Wildlife Service (USFWS) on potential impacts to federally listed species. A total of one federally listed plant species was identified as having the potential to occur within these allotments and will be analyzed. There are currently no known endangered plant species and one threatened plant species habitat. At the present time there are no known populations of Jones

Cycladenia within these allotments. Table 12 contains the most current threatened plant species list which shows the allotments which habitat is found. There are no designated critical habitats for Jones Cycladenia within these allotments. Discussions of each plant species in Table 12.

Table 12: Federally Listed Plant Species with Potential Habitat within these Allotments

Common Name (Scientific Name)	Habitat	Status	Potential for Occupancy in the Sand Flats, Scharf Mesa and Hotel Mesa Allotments
Jones Cycladenia (<i>Cycladenia humilis</i> <i>var. jonesii</i>)	Jones Cycladenia has exacting soil requirements, growing only on the gypsiferous, saline soils of the Cutler, Summerville, and Chinle formations. Jones Cycladenia is restricted to soils with a narrow range of morphological and physical properties. Soils are shallow (<50 cm), have high rock fragment content (increases to almost 100% with depth), and are formed in shale that fractures angularly in situ. Soils that support Jones Cycladenia often occur on steep slopes (50%) with erosive surfaces. It occurs in plant communities of mixed desert scrub, juniper, or wild buckwheat and Mormon tea at elevation between 4,390 to 6,000 feet. The existing populations of plants in the Moab Field Office are found on steep slopes.	Threatened	Sand Flats Allotment
			The model shows a range of habitat within the Sand Flats Allotment which is approximately 840 acres of low 3% potential, approximately 10,573 acres of medium low 34% potential, approximately 360 acres of medium high 21% potential and approximately 7,084 acres of highest 38% potential ratings.
			Scharf Mesa Allotment
			The model shows a range of habitat within the Scharf Mesa Allotment which is approximately 80 acres of low 3% potential, approximately 160 acres of lower 5% potential, approximately 1,288 acres of medium low 34% potential, approximately 1,000 acres of medium high 21% potential, and approximately 3,962 acres of highest 38% potential ratings.
			Hotel Mesa Allotment
			The model shows a range of habitat within the Hotel Mesa Allotment which is approximately 80 acres low 3% potential, and approximately 596 acres of medium low 34% potential ratings.

The proposed action and other alternatives are in an area with potential habitat for the Jones Cycladenia. There are no known populations of Jones Cycladenia within these allotments.

Table 13: Jones Cycladenia Potential Habitat, Topography, Vegetation and Rational for Impacts within these Allotments

Allotment Name	Model Potential Habitat	Topography and vegetation	Rational
Sand Flats	840 acres- Low 3%	These acres are next to the Colorado and Dolores Rivers. These acres are made up of flat to rough terrain and vegetation is mixture of salt desert scrub, blackbrush, native grasses and scatter cottonwood trees along the Colorado river, Dolores river and Coates creek.	This area is accessible to cattle grazing and utilization over the years has range from no use to moderate use depending on the year. These soils are sandy to sandy loam and deep to very deep. Jones Cycladenia is found on soils that are shallow (<50 cm), have high rock fragment content (increases to almost 100% with depth), and are formed in shale that fractures angularly in situ. The potential for Jones Cycladenia to occur in these acres is very low.
	10,573 acres-Medium Low 34%	Some of the acres are next to Colorado River, but majority of the acres are away from the river. These acres are made up of flat terrain with deep soils and some areas are in rough terrain with steep slopes, many small canyon and mesa tops.	Majority of these acres are accessible to cattle grazing except for 600 acres in Westwater Canyon along the Colorado River are inaccessible to cattle due to cliffs and steep slopes. There are additional 1,069 acres within Westwater Canyon

Allotment Name	Model Potential Habitat	Topography and vegetation	Rational
		Vegetation is a mixture of desert scrub, blackbrush and desert grasslands.	WSA on the mesa tops above the river which has no-use to very slight use by wildlife. There are no cattle grazing due to the rough terrain, lack of forage and water. There is no evidence of cattle grazing. There would be no impacts to this habitat by cattle grazing due to the inaccessibility of the terrain with rough and steep slopes, lots of boulders and no cattle grazing. There is additional 3,110 acres outside the WSA which are inaccessible to cattle grazing and utilization has been no-use to light use depending on the year. There is no evidence of cattle grazing within these acres but there are deer and elk use. There are natural seeps, springs and portion of the Colorado river within these acres. There would be no impacts to this habitat by cattle grazing due to the inaccessibility of the terrain due to roughness, steep slopes, lots of boulders and no cattle grazing. There are 5,794 acres that have deep sandy soils (>50 cm) which Jones' Cycladenia prefer shallow soils (<50 cm). These acres are accessible to cattle grazing and utilization in these deep soils has been light to moderate use over the years. This area has dirt ponds, natural spring, seeps and the Colorado river. In April 2015 and 2016 BLM surveyed around the water locations where cattle would make the most use of the vegetation which amounts to 4,385 acres and no plants were found. It is our view point that this may not be suitable habitat for Jones' Cycladenia. It is our opinion that with the surveyed area finding no plants rest of the acres are very similar and that there would be no impact to the habitat. The long term vegetation studies show a static to upward trend.
	360 acres – Medium High 21%	The topography is very rough with steep canyons and mesa tops. The habitat has a lot of slick rock, boulders and small cliffs throughout the area. Vegetation is mainly blackbrush with scattered juniper trees and there are a few acres of dense stands of juniper and pinyon pine trees. The soils are very shallow to shallow.	There are 170 acres within the Westwater Canyon WSA and there are additional 190 acres which are outside the WSA and all these acres are inaccessible and/or unsuitable to cattle grazing. These acres are inaccessible to cattle grazing due to the rough terrain, steep slopes, lack of water, low forage and dense stands of juniper and pinyon pine. Utilization has been no-use to slight use. There is no evidence of cattle grazing within these acres, but there are deer and elk making use of this area. Due to the inaccessibility of these acres there would be no impacts to the habitat due to cattle grazing.
	7,084 acres – Highest 38%	The topography is very rough and is made up of steep slopes within many canyons	Majority of these acres are inaccessible to cattle. There are 3,080 acres within

Allotment Name	Model Potential Habitat	Topography and vegetation	Rational
		and many mesa tops. Within this habitat there are a lot of slick rock, boulders and small cliffs throughout the area. Vegetation is a lot of juniper trees with understory of mainly blackbrush with some salt desert scrub. The soils are very shallow to shallow. There are low amounts of livestock forage and no water.	Westwater Canyon WSA and there is additional 3,564 acres which are unsuitable and/or inaccessible to cattle grazing. These acres are inaccessible to cattle grazing due to the rough terrain, steep slopes, lack of water, low forage and utilization has been no-use to slight use. There is no evidence of cattle grazing within these acres, but there are deer and elk making use of this area. BLM in April 2016 surveyed 240 acres which are inaccessible to cattle grazing and no plants were found. Due to the inaccessibility of these acres there would be no impacts to habitat due to the lack of livestock grazing. There are 440 acres that are accessible to cattle grazing. The utilization within these acres has a range between slight to light use. There are two dirt ponds within these acres. The soil is a deeper than most of these highest potential habitat areas within Sand Flat Allotment. BLM in April 2016 surveyed 415 acres around the ponds and found no plants. Due to the surveyed these accessible acres would have no impacts to the vegetation and habitat due to the low livestock use and no plants were found in the surveyed area.
Scharf Mesa	80 acres – Low 3%	These acres are next to the Dolores River. The terrain is rough with a portion of it is flat with deep soils. The vegetation is salt desert scrub and grasses.	Majority of these acres are inaccessible to cattle due to cliff next to the river bank. Utilization over the years has been no use by cattle. The potential for Jones Cycladenia to occur in these acres are low. Due to the low potential and low utilization (no use) by cattle. The potential for Jones' Cycladenia to occur in these acres are very low there would be no impact to the habitat of Jones Cycladenia.
	160 acres – Lower 5%	The terrain is very rough with steep canyons. Vegetation has high density of juniper and pinyon pine with some understory of shrubs and grasses.	The potential for Jones Cycladenia to occur in these acres is low. These acres are inaccessible to cattle grazing and there is no evidence of cattle use. The utilization over the years has been no-use by cattle. The impacts to this habitat is low due to the lack of cattle use, low forage for cattle, very rough terrain with steep canyons, lack of water, high density of pinyon pine and juniper.
	1,288 acres – Medium Low 34%	These acres are in the uplands above the Dolores River. Terrain is very rough and very steep slopes. Vegetation is mixture of blackbrush and salt desert scrub communities. These acres are inaccessible to cattle grazing.	There are 1,075 acres that are inaccessible to cattle and utilization over the years has been no use to slight use. The impacts to this habitat is low due to no cattle use, low forage for cattle, very rough terrain, steep canyons, lack of water, high density of pinyon pine and juniper. There is no evidence of cattle use. There are approximately 213 acres that are

Allotment Name	Model Potential Habitat	Topography and vegetation	Rational
	<p>1,000 acres – Medium High 21%</p> <p>3,962 acres – Highest 38%</p>	<p>These acres are above Granite Creek Canyon and terrain is very rough with many small canyons with steep slopes and vegetation is high density of juniper and pinyon pine.</p> <p>These acres are a mixture of rough and flat terrain. Many small canyons and mesa tops make up this area. There are very steep slopes below the mesa tops and canyon slopes. Vegetation is a mixture of blackbrush with scatter juniper trees, salt desert scrub and small areas of sagebrush parks.</p>	<p>accessible to cattle use. Utilization has been slight to light use by wildlife and cattle throughout the years. BLM surveyed these 213 acres in April 2016 and no plants were found.</p> <p>The impacts to the habitat would not occur because this area is not used by cattle due to the lack of water, very rough terrain, steep canyon slopes, and high density of juniper and pinyon pine. There is no evidence of cattle use and no survey was done.</p> <p>There is 1,722 acres that is inaccessible to cattle grazing due to the steep slopes, rough terrain, low cattle forage and no livestock water. There is no evidence of cattle use within this area. Due to inaccessibility of these acres there would be no impacts to habitat due to cattle grazing. No acres were surveyed due to the inaccessibility for cattle to make use of the area. There was 2,240 acres of habitat that are accessible to cattle for grazing and utilization over the years has been slight to moderate use. Out of the 2,240 acres there was 183 acres of sagebrush parks with very deep soils which are not considered habitat for Jones' Cycladenia due to the soil depth and vegetation. The area that was surveyed has four dirt ponds and one developed spring. The BLM surveyed 2,240 acres in April 2016 and found no plants. The long term trend shows a static to upward from 2001 to 2012. At the present time cattle grazing has not impacted the Jones' Cycladenia habitat.</p>
Hotel Mesa	<p>80 acres – Low 3%</p> <p>596 acres – Medium Low 34%</p>	<p>These acres are next to the Colorado River. Flat to rough terrain and vegetation is salt desert scrub.</p> <p>These acres are above the Dolores River. This area has steep slopes and flat mesa top. Vegetation mainly blackbrush with scatter juniper trees. There are a few acres of desert scrub plant communities.</p>	<p>These 80 acres are accessible to cattle and utilization over the years has been slight to light use. There is very few evidence of livestock use within these acres. Since this area is low potential habitat, BLM did not survey any these acres. There would be no impacts to this habitat due to low utilization by livestock, portion of these acres are in rough terrain and low potential habitat for Jones' Cycladenia.</p> <p>These 596 acres are accessible to cattle and utilization over the years has been no-use to slight use. The impacts to the habitat would not occur within these acres due to utilization has been low, lack of water and portion of the acres are in rough terrain and steep slopes. BLM surveyed all this acres (596) in April 2016 and no plants were found.</p>

Jones Cycladenia

At the time of listing, Jones Cycladenia was found in Emery, Grand, and Garfield Counties in Utah and known historically from a fourth indeterminate site named Pipe Spring, in Mohave County, Arizona and Kane County, Utah. Today, Jones Cycladenia is known from 26 sites located in five complexes; Joe Hutch Creek, San Rafael, Moab, and Greater Circle Cliffs in Utah, and Pipe Springs in Arizona. The Moab complex includes the Onion Creek, Castle Valley, below Dead Horse State Park sites. The populations were disjunction, occurring at least 100 miles apart. The plant occurs at an elevation between 4,390 to 6,000 feet. Jones Cycladenia flowers in mid-May through June.

Due to this species small number of populations, the isolated nature of those populations, and a number of threats, it was federally listed as “threatened” in 1986 (USFWS). No critical habitat was designated for it, since many of the populations were not considered to be under immediate threat from direct anthropogenic factors and the delineation of critical habitat could increase the chances for illegal harvesting. Jones Cycladenia is thought to be a Tertiary relict, poorly adapted to the present-day arid climatic regime found within an ecosystem that is thought to be fragile, easily degraded and slow to recover. Ongoing and potential anthropogenic impacts to habitat include: off-highway vehicle (OHV) use; oil, gas, and mineral exploration, including uranium mining and tar sands; and livestock grazing (although the rule, 51 FR 16526, May 5, 1986, notes the probability of grazing causing serious damage was low).

All known populations of Jones Cycladenia found in the Moab Field Office are located on very steep slopes inaccessible to cattle. EEC field work currently shows that all known populations occur in areas modeled as medium low to highest potential with surveys completed in low to lowest potential areas having negative results. All plants that have been located within the MFO have been within areas with high to medium low potential. The known populations of plants are in Professor Valley, Castle Valley, steep slopes above Onion Creek, steep slopes north of the Colorado River in Professor Valley and on the slopes below Deadhorse Point State Park. These plant locations are outside the Sand Flats, Scharf Mesa and Hotel Mesa Allotments.

Utah BLM Sensitive Species

The BLM’s Special Status Species Management Policy (6840 Manual Section) (Rel. 6-121) directs the BLM to identify and protect sensitive species. The Utah Sensitive Species List, December 14, 2007 and the Utah Nation Heritage database were used to identify potential habitat for state sensitive species.

Table 14: Special Plant Status Species in Utah with habitat within these Allotments

Common Name	Scientific Name	Status	Critical Habitat	Grazing Allotment
<i>PLANTS</i>				
Dolores rushpink	<i>Lygodesmia doloresensis</i>	Utah State Sensitive	No	Sand Flats Scharf Mesa Hotel Mesa

Special Plant Status Species in the Sand Flats, Scharf Mesa and Hotel Mesa Allotments

Dolores rushpink habitat is found in Juniper, sagebrush, rabbitbrush, and blackbrush communities in reddish alluvial sandstone soils, at the elevation of 4,600 to 4,700 and flowers in June. It is found at only three sites. It grows in the Dolores River Canyon in Colorado and the Colorado River Canyon in Utah. Some of its habitat is heavily grazed by cattle, and the plant is only found in spots where the animal cannot graze.

Known locations of this plant are found within the Dolores River Canyon in Colorado and on a 8 km stretch of the Colorado River Canyon in Professor Valley; which is five miles southwest of the Sand Flats, Scharf Mesa and Hotel Mesa Allotments.

Over grazing has been documented as the primary threat to this specie, however, Lyon Rondeau in 1996 indicates that the species seems to be surviving with grazing (Rondeau et al. 2011).

3.3.5 Vegetation

Ecological Sites

Rangeland landscapes are divided into ecological sites for the purposes of inventory, evaluation, and management. Ecological sites have developed a characteristic kind and amount of vegetation. The natural plant community on an ecological site is typified by an association of species that differs from that of other ecological sites, in the kind and/or proportion of species or in annual production. While the natural plant community of a particular ecological site is recognized by characteristic patterns of species associations and community structure, the specific species present from one location to another may exhibit tremendous variability. The natural plant community is not a precise assemblage of species for which the proportions are the same from place to place or even in the same place from year to year. The distinctive plant communities associated with each ecological site (including the tremendous variability which frequently occurs) can be identified and described, and are called ecological site descriptions.

Sand Flats Allotment

The ecological sites where most grazing occurs in the Sand Flats Allotment are: Desert Shallow Sandy Loam (blackbrush/Shadscale), Desert Sandy Loam (blackbrush), Desert Sandy Loam (Indian ricegrass), Semidesert Shallow Sandy Loam (blackbrush or JP), Semidesert Sandy Loam (Fourwinged saltbush/Indian ricegrass), Semidesert Stony Loam (Blackbrush) and Alkali Flat (Greasewood)) (Canyonlands Area Soil Survey Utah Parts of Grand and San Juan Counties) (USDA, 1980). Table 15 shows the ecological sites and dominant plants.

Table 15 Sand Flats Ecological Sites (Ecological Site Descriptions NRCS website)

Ecological site	Species in the Dominant Functional Structural Groups
Desert Shallow Sandy Loam (Blackbrush/shadscale)	James' galleta, sand dropseed grass, globemallow, shadscale, blackbrush, and Mormon tea
Desert Sandy Loam (Blackbrush)	James' galleta, Indian ricegrass, sand dropseed, globemallow, blackbrush and Mormon tea
Desert Sandy Loam (Indian ricegrass)	Indian ricegrass, James' galleta, sand dropseed, globemallow, and Fourwing saltbush
Semi-desert Shallow Sandy Loam (Blackbrush or JP)	Indian ricegrass, James' galleta, Needle & thread grass, blackbrush, Pinyon pine, and Rocky Mountain juniper

Ecological site	Species in the Dominant Functional Structural Groups
Semi-desert Sandy Loam (Fourwinged saltbush/Indian ricegrass)	Indian ricegrass, needle-thread, globemallow, Torrey Mormon-tea, Wyoming sagebrush, and Fourwinged saltbush
Semi-desert Stony Loam (Blackbrush)	Indian ricegrass, James' galleta, blackbrush, and Mormon tea
Alkali Flat (Greasewood)	Indian ricegrass, sand dropseed grass, James' galleta, and black greasewood

Scharf Mesa Allotment

The ecological sites where most grazing occurs in the Scharf Mesa Allotment are: Upland Loam (Basin big sagebrush), Upland Shallow Loam (PJ), Semi-desert Shallow Sandy Loam (Blackbrush/JP), Semi-desert Shallow Sandy Loam (Blackbrush) and Semi-desert Stony Loam (Blackbrush)) (Canyonlands Area Soil Survey Utah Parts of Grand and San Juan Counties) (USDA, 1980). Table 16 shows the ecological sites and dominant plants.

Table 16: Scharf Mesa Ecological Sites (Ecological Site Descriptions NRCS website)

Ecological site	Species in the Dominant Functional Structural Groups
Upland Loam (Basin big sagebrush)	Needle & thread grass, James' galleta, Mutton grass, globemallow, Indian ricegrass and Basin big sagebrush
Upland Shallow Loam (PJ)	Indian ricegrass, James' galleta, Basin big sagebrush, Rocky Mountain juniper, pinyon pine, and Torrey Mormon tea
Semi-desert Shallow Sandy Loam (Blackbrush/JP)	Indian ricegrass, James's' galleta, bigelow sagebrush, Mormon tea, Pinyon pine and Utah juniper
Semidesert Shallow Sandy Loam (Blackbrush)	James' galleta, Indian ricegrass, Needle & thread grass, blackbrush, Utah juniper and Pinyon pine
Semi-desert Stony Loam (Blackbrush)	Indian ricegrass, James' galleta, blackbrush, and Torrey Mormon tea

Hotel Mesa Allotment

The ecological sites where most grazing occurs in the Hotel Mesa Allotment are: Semi-desert Shallow Sandy Loam (Blackbrush/JP), Semi-desert Stony Loam (Blackbrush), Desert Shallow Sandy Loam (Shadscale), Desert Shallow Sandy Loam (Blackbrush) and Desert Sandy Loam (Indian ricegrass)(Canyonlands Area Soil Survey Utah Parts of Grand and San Juan Counties) (USDA, 1980). Table 17 shows the ecological sites and dominant plants.

Table 17: Hotel Mesa Ecological Sites (Ecological Site Descriptions NRCS website)

Ecological site	Species in the Dominant Functional Structural Groups
Semi-desert Shallow Sandy Loam (Blackbrush/JP)	Indian ricegrass, James' galleta, needle-thread, blackbrush, rocky Mountain juniper and Pinyon pine
Semi-desert Stony Loam (Blackbrush)	Indian ricegrass, James' galleta, Torrey Mormon tea and blackbrush
Desert Shallow Sandy Loam (Shadscale)	Sand dropseed grass, James' galleta, shadscale, globemallow and Mormon tea
Desert Shallow Sandy Loam (Blackbrush)	James' galleta, Indian ricegrass, blackbrush and Mormon tea
Desert Sandy Loam (Indian ricegrass)	Indian ricegrass, James' galleta, Sand dropseed grass, shadscale, winterfat and Fourwing saltbush

Common attributes used to characterize the health of vegetation

Frequency – The ratio between the number of sample units that contain a species and the total number of sample units.

Vigor – The relative health of a plant, judged by observing its robustness and over-all ability to sustain and regenerate itself considering the climate and productivity of the site it occupies.

Diversity – The number of different species in a particular area weighted by some measure of abundance.

Density – Number of individuals per unit area.

Age classes – The distribution of different ages of the same species or group of species on a site.

Production by Plant species (or annual production by plant species) – All above-ground plant biomass produced during a single growing year for a given plant species. Production by plant species is expressed in pounds per acre (lbs. /acre).

Vegetative Monitoring and Trend

Vegetative trend data is an important tool used in determining if current management actions are effective in meeting, or enabling progress towards meeting, objectives related to these allotments. The trend of a plant community may be determined by noting changes in characteristics such as composition, density, cover, production, reproduction, and frequency of occurrence for vegetation species tempered with climatic variations and uses.

Key area trend studies have been established throughout these allotments (see Appendix A, Maps #1, #2 and #3). Key Areas are a portion of a representative rangeland selected for its ability to detect changes within the plant community and variations in rangeland health conditions for a larger ecological site. Collected monitoring data is summarized and used to help determine directions in vegetative trend over a period of time. The BLM has converted key areas from density monitoring to frequency and line intercept within these allotments. The BLM would be using density trend information for this evaluation. For the purpose of the density trend information contained in Table 18, 21 and 24 trend is based on professional judgment. Trend of up (increase of 3 or more plants), down decrease of 3 or more plants), or static (a change of less than 3 plants up or down) is based on a comparison of the first years data to the last years data.

Riparian monitoring by using the Riparian Area Management TR1737-15 1998, Revised 2015 and TR1737-16 1999, Revised 2003. A User Guide to Assessing Proper Functioning Condition (PFC) and the Supporting Science for Lotic Areas and Lentic Areas. Studies on a Riparian area would be done when an issue(s) arise or when grazing management changes.

Sand Flats Allotment

There are five vegetation types located in this allotment. The dominant types are Blackbrush and Salt Desert Scrub. Table 18 lists the five types and the amount of acreage for each type within

the allotment.

Table 18 Sand Flat Allotment Vegetation Types

Type	BLM Acres
Black Brush	10,708
Desert Grassland	520
Juniper	6,468
Salt Desert Scrub	14,058

The important forage grass species on the Sand Flats Allotment include galleta grass, Indian ricegrass, sand dropseed grass, and needle-thread grass. Important forage shrub species include winterfat, spiny hopsage, Mexican Cliffrose, Mormon tea, Fourwinged saltbush, Wyoming sagebrush and shadscale. These species are the main plant species used to monitor vegetative trend on the Sand Flats Allotment. Also blackbrush is the dominant plant species within this allotment but is not utilized by cattle but is used by the wintering deer herd.

The Sand Flats Allotment currently contains 11 key areas, three Exclosure plots and six old study plots. The key area locations are plotted on the Map 1 in Appendix A. The table below summarizes the key area, key plant species, trends for each species, key species objective and a general trend for each transect. This table represents the period from 2001 to 2012, the years that the density studies were read.

Table 19: Long Term Trend Studies for Sand Flats Allotment

Key Area	Key Plant Species	Year				**Key Species Objective	Objective Met?	Density Trend by Species	Overall Density Trend
		2001	2004	2009	2012				
Sand Flats West Pasture									
Plot #1	Indian ricegrass *Galleta grass Fourwinged saltbush	0 3% 1	1 2% 1	1 3% 4	1 6% 4	None None None	N/A N/A N/A	Static Up Up	Up
KA-15	Indian ricegrass *Galleta grass Sand dropseed grass Spiny Hopsage Fourwing saltbush	0 3.3% 9 0 1	0 2.7% 7 1 1	0 2.7% 7 1 1	0 5% 2 1 1	5 plants 5% cover 4 plants Maintain 2 plants Maintain 1 plant	No Yes No No Yes	Static Static Down Static Static	Static
KA-17	Indian ricegrass *Galleta grass Sand dropseed grass Winterfat	0 3% 4 1	0 1.8% 1 1	0 4% 6 1	0 5.2% 15 1	4 plants 3% cover 3 plants Maintain 1 plant	No Yes Yes Yes	Static Up Up Static	Up
Exclosure #36	*Galleta grass Sand dropseed grass Fourwing saltbush	¼ % 2 1	1% 2 1	½ % 2 1	¾ % 3 0	None None None	N/A N/A N/A	Static Static Static	Static
Sand Flats East Pasture									
Plot #6	Indian ricegrass *Galleta grass Sand dropseed grass Fourwing saltbush	1 3% 0 0	1 8% 0 0	1 4% 3 4	1 5% 4 6	None None None None	N/A N/A N/A N/A	Static Static Up Up	Up
KA-14	*Galleta grass Sand dropseed grass Fourwing saltbush	0% 1 4	0% 1 4	0% 5 4	0% 11 2	2% cover Maintain 10 plants Maintain 4 plants	No Yes No	Static Up Static	Up

Knowles Pasture									
KA-16	*Galleta grass	.33%	0%	0%	0%	5% cover	No	Static	Static
	Sand dropseed grass	0	0	0	0	Maintain 3 plants	No	Static	
	Fourwing saltbush	1	1	2	3	Maintain 2 plants	Yes	Static	
	Blackbrush	32	27	28	34	None	N/A	Static	
Plot #27	Blackbrush	23	15	18	18	None	N/A	Down	Down
	Mormon tea	1	1	1	1	None	N/A	Static	
Plot #28	*Galleta grass	0%	0%	0%	0%	None	N/A	Static	Static
	Blackbrush	24	21	23	26	None	N/A	Static	
	Shadscale	3	5	3	3	None	N/A	Static	
Hotel Mesa Pasture									
KA-8	Indian ricegrass	3	1	2	3	5 plants	No	Static	Up
	*Galleta grass	2.6%	2%	2.1%	1%	5% cover	No	Static	
	Needle& thread grass	4	0	0	0	3 plants	No	Down	
	Winterfat	18	21	21	23	Maintain 5 plants	Yes	Up	
	Shadscale	5	6	6	10	Maintain 5 plants	Yes	Up	
Plot #9	*Galleta grass	3%	4%	6%	5%	None	N/A	Static	Up
	Sand dropseed grass	0	4	5	6	None	N/A	Up	
KA-13	Indian ricegrass	3	2	1	0	6 plants	No	Down	Down
	*Galleta grass	4.8%	2.5%	1.9%	1.8%	5% cover	No	Down	
	Shadscale	13	8	11	16	Maintain 10 plants	Yes	Up	
	Blackbrush	8	8	8	7	None	N/A	Static	
Exclosure #34	*Galleta grass	5%	4%	3.5%	3%	None	N/A	Static	Down
	Winterfat	1	1	1	1	None	N/A	Static	
	Shadscale	10	9	14	7	None	N/A	Down	
Cow Creek Pasture									
KA-7	Indian ricegrass	0	1	3	3	3 plants	Yes	Up	Up
	*Galleta grass	2.1%	1.3%	1.6%	1.2%	5% cover	No	Static	
	Fourwing saltbush	6	8	9	9	Maintain 4 plants	Yes	Up	
	Blackbrush	9	11	12	12	None	N/A	Up	
	Sand dropseed grass	3	2	4	5	None	N/A	Static	
Buckhorn Pasture									
Plot #10	Blackbrush	26	24	25	28	None	N/A	Static	Static
	Morman tea	1	0	0	0	None	N/A	Static	
KA-21	Mormon tea	2	2	2	2	Maintain 1 plant	Yes	Static	Static
	Mexican Cliffrose	1	1	1	1	Maintain 1plant	Yes	Static	
	Blackbrush	47	42	44	49	None	N/A	Static	
KA-22	Indian ricegrass	1	1	2	2	6 plants	No	Static	Static
	*Galleta grass	1.1%	.7%	.4%	1.3%	3% cover	No	Static	
	Needle& thread grass	6	1	3	3	Maintain 6 plants	No	Down	
	Winterfat	3	2	3	3	Maintain 1 plant	Yes	Static	
	Fourwing saltbush	1	0	0	1	Maintain 1 plant	Yes	Static	
	Wyoming sagebrush	.21	11	17	20	Maintain 15 plants	Yes	Static	
KA-24	Indian ricegrass	8	3	3	2	6 plants	No	Down	Down
	Sand dropseed grass	22	4	9	7	Maintain 10 plants	No	Down	
	Wyoming sagebrush	32	24	32	35	Maintain 20 plants	Yes	Up	
Exclosure 35	Indian ricegrass	1	0	0	0	None	N/A	Static	Static
	*Galleta grass	8%	9%	6.5%	10.5%	None	N/A	Static	
	Fourwing saltbush	1	2	1	1	None	N/A	Static	
	Wyoming sagebrush	2	1	1	1	None	N/A	Static	
Sand Blast Pasture									
KA-39	Indian ricegrass	0	0	0	0	4 plants	No	Static	Up
	*Galleta grass	.7%	2 %	4.3%	2.3%	2% cover	Yes	Static	
	Sand dropseed grass	4	26	30	21	Maintain 10 plants	Yes	Up	
	Fourwing saltbush	2	6	5	6	Maintain 4 plants	Yes	Up	

*Galleta Grass is measured based on foliar cover rather than density.

** Objectives were based on averaging the cover data for Galleta Grass in the 3 plots and adding the density data by species in the 3 plots.

The following table shows the key area plant species, percent utilization for each key species, and utilization for all the key species within the key area.

Table 20: Sand Flats Allotment Utilization for Key Species

Key Area	Key Plant Species	Percent Utilization for Key Species				
		Years 2001-2014				
		2001-02	2007-08	2013-14		Average Use by Species
Sand Flats West Pasture						
Old Plot #1	Indian ricegrass	63%	72%	46%		Heavy Use
	Galleta grass	42%	32%	8%		Light Use
	Sand dropseed grass	47%	52%	17%		Light Use
	Needle & thread grass	90%	77%	46%		Heavy Use
	Winterfat	45%	45%	*		Moderate Use
	Fourwing saltbush	40%	28%	11%		Light Use
	Average Use by year	Moderate	Moderate	Light		
KA-15	Indian ricegrass	60%	60%	42%		Moderate Use
	Galleta grass	48%	32%	14%		Light Use
	Sand dropseed grass	56%	48%	28%		Moderate Use
	Winterfat	43%	*	*		Moderate Use
	Spiny Hopsage	*	46%	*		Moderate Use
	Fourwing saltbush	40%	28%	16%		Light Use
	Average Use by Year	Moderate	Moderate	Light		
KA-17	Indian ricegrass	50%	50%	60%		Moderate Use
	Galleta grass	38%	38%	11%		Light Use
	Sand dropseed grass	56%	35%	23%		Light Use
	Winterfat	30%	50%	*		Light Use
	Fourwing saltbush	30%	30%	20%		Light Use
	Shadscale	*	*	7%		Slight Use
	Average Use by Year	Moderate	Moderate	Light		
Sand Flats East Pasture						
Old Plot #6	Indian ricegrass	68%	52%	57%		Moderate Use
	Galleta grass	46%	22%	11%		Light Use
	Sand dropseed grass	66%	35%	39%		Moderate Use
	Needle & thread grass	*	50%	37%		Moderate Use
	Fourwing saltbush	37%	30%	34%		Light Use
		Average Use by Year	Moderate	Light	Light	
KA-14	Indian ricegrass	78%	*	60%		Heavy Use
	Galleta grass	43%	*	30%		Light Use
	Sand dropseed grass	72%	46%	54%		Moderate Use
	Fourwing saltbush	44%	46%	10%		Light Use
		Average Use by Year	Moderate	Moderate	Light	
Knowles Pasture						
KA-16	Indian ricegrass	*	14%	14%		Slight Use
	Galleta grass	45%	10%	10%		Light Use
	Sand dropseed grass	50%	10%	12%		Light Use
	Winterfat	*	30%	3%		Slight Use
	Fourwing saltbush	36%	23%	6%		Light Use
		Average Use by Year	Moderate	Slight	Slight	
Old Plot #27	Indian ricegrass	*	10%	3%		Slight Use
	Mormon tea	10%	16%	7%		Slight Use
	Wyoming sagebrush	10%	26%	23%		Light Use
	Fourwing saltbush	10%	21%	15%		Slight Use
	Blue Grass	*	*	3%		No Use
		Average Use by Year	Slight	Slight	Slight	
Old Plot #28	Indian ricegrass	*	18%	12%		Slight Use
	Galleta grass	44%	16%	3%		Light Use
	Needle & thread grass	*	30%	*		Light Use
	Shadscale	36%	24%	3%		Light Use
		Average Use by Year	Light	Light	Slight	
KA-30	Indian ricegrass			4%		No Use
	Galleta grass			3%		No Use
	Sand dropseed grass			5%		No Use
	Winterfat			15%		Slight Use
	Fourwing saltbush			14%		Slight Use
	Average Use by Year			Slight		

Hotel Mesa Pasture						
KA-8	Indian ricegrass	40%	53%	54%		Moderate Use
	Galleta grass	28%	24%	9%		Light Use
	Sand dropseed grass	*	50%	43%		Moderate Use
	Needle & thread grass	43%	*	*		Moderate Use
	Winterfat	30%	61%	51%		Moderate Use
	Shadscale	14%	26%	11%		Slight Use
	Average Use by Year	Light	Moderate	Light		
Old Plot #9	Indian ricegrass	10%	40%	35%		Light Use
	Galleta grass	18%	28%	4%		Slight Use
	Sand dropseed grass	10%	23%	15%		Slight Use
	Shadscale	10%	30%	9%		Slight Use
	Average Use by Year	Slight	Light	Slight		
KA-13	Indian ricegrass	45%	10%	6%		Slight Use
	Galleta grass	26%	10%	3%		Slight Use
	Shadscale	18%	12%	5%		Slight Use
	Salina wildrye	*	*	3%		No Use
	Average Use by Year	Light	Slight	No Use		
Cow Creek Pasture						
KA-7	Indian ricegrass	40%	59%	38%		Moderate Use
	Galleta grass	42%	24%	15%		Light Use
	Sand dropseed grass	54%	46%	31%		Moderate Use
	Shadscale	17%	*	5%		Slight Use
	Fourwing saltbush	45%	43%	14%		Light Use
	Average Use by Year	Moderate	Moderate	Light		
KA-33 (New Plot)	Indian ricegrass			25%		Light Use
	Galleta grass			14%		Slight Use
	Shadscale			8%		Slight Use
	Average Use by Year			Slight		
Buckhorn Pasture						
Old Plot #10	Indian ricegrass	*	10%	3%		Slight Use
	Mormon tea	10%	14%	14%		Slight Use
	Mexican cliffrose	39%	30%	*		Light Use
	Blackbrush	12%	18%	10%		Slight Use
	Average Use by Year	Slight	Slight	Slight		
KA-21	Indian ricegrass	*	10%	4%		Slight Use
	Mormon tea	12%	10%	12%		Slight Use
	Mexican cliffrose	25%	25%	18%		Light Use
	Blackbrush	16%	20%	6%		Slight Use
	Average Use by Year	Slight	Slight	Slight		
KA-22	Indian ricegrass	46%	75%	53%		Moderate Use
	Galleta grass	46%	38%	38%		Moderate Use
	Needle & thread grass	64%	78%	65%		Heavy Use
	Winterfat	70%	*	*		Heavy Use
	Wyoming sagebrush	60%	66%	66%		Heavy Use
	Fourwing saltbush	60%	50%	*		Moderate Use
	Average Use by Year	Moderate	Heavy	Moderate		
KA-24	Indian ricegrass	30%	47%	40%		Light Use
	Galleta grass	43%	33%	18%		Light Use
	Sand dropseed grass	52%	42%	27%		Moderate Use
	Wyoming sagebrush	48%	62%	60%		Moderate Use
	Average Use by Year	Moderate	Moderate	Light		
Sand Blast Pasture						
KA-39	Indian ricegrass	80%	35%	60%		Moderate Use
	Galleta grass	46%	39%	6%		Light Use
	Sand dropseed grass	68%	44%	13%		Moderate Use
	Winterfat	*	10%	17%		Slight Use
	Fourwing saltbush	43%	30%	15%		Light Use
	Wyoming Sagebrush	*	*	35%		Light Use
	Average Use by Year	Moderate	Light	Light		

*Utilization was not done on these plants or year.

Utilization Classes:

No Use	0 to 5% utilization of Key Species
Slight Use	6 to 20% utilization of Key Species
Light Use	21 to 40% utilization of Key Species
Moderate Use	41 to 60% utilization of Key Species
Heavy Use	61 to 80% utilization of Key Species
Severe Use	80 to 100% utilization of Key Species

Majority of the key plant species within Sand Flats West Pasture, Sand Flats East Pasture and Sand Blast Pasture has average use of light to moderate throughout the years. Majority of the key plant species within the Knowles Pasture has average use of slight to light throughout the years except for 2001-02 within KA-16 had an average use of moderate. Majority of the key plant species within Hotel Mesa Pasture has an average use of slight to light throughout the years except for 2007-08 within KA-8 had an average use of moderate and in 2013-14 had average of no use. Majority of the key plants species within Cow Creek Pasture has average use of slight to moderate throughout the years. Majority of the key plants species within Buckhorn Pasture has average use of slight to moderate throughout the years except for 2007-08 within KA-22 had an average use of heavy.

A comparison of the long term monitoring data reveals that the overall trend for the plant communities on the Sand Flats Allotment is static to upward. However, there are a few areas showing a downward trend. Sand Flats Allotment apparent trend reports show that all the key areas and old study plots are in a static to upward trend in 2013-14 (See Appendix E-Apparent Trend Data). Long term trend data is static to upward and the factors contributing to the static trend include past drought conditions and higher percentage of AUMs used (refer to Appendix F-Actual Use Data) during the drought year of 2011-12. The major concern within Sand Flats Allotment is three small areas, approximately 180 acres within the Sand Flats East Pasture and trend is static; 140 acres and 160 acres within the Sand Flats West Pasture shows a static to upward trend. Range Land Health Standard #3 is Functioning-at-Risk at the present time for these small areas. There have been discernible impacts to the vegetation in the past years within these pastures as a result of drought, livestock grazing and insect infestation with the Fourwinged saltbush. These stressors have impacted the number of plants and reduce vigor. Sand Flats East Pasture and Sand Flats West Pasture needs more spring rest. It should be noted that utilization for these pastures has an average use between light to moderate throughout the years.

Scharf Mesa Well Allotment

There are four vegetation types located in this allotment. The dominant types are salt desert scrub and pinyon/juniper communities. Table 21 lists the three types and the amount of acreage for each type within the allotment.

Table 21 Scharf Mesa Allotment Vegetation Types

Type	BLM Acres
Black Brush	1,220
Pinyon/Juniper	3,270
Sagebrush	220
Salt Desert Scrub	4,768

The important forage grass species on the Scharf Mesa Allotment include galleta grass, Indian ricegrass, and sand dropseed grass. Important forage shrub species include: shadscale, Fourwing saltbush, and winterfat and Wyoming sagebrush. These species are the main plant species used to monitor vegetative trend on the Scharf Mesa Allotment. Also blackbrush is a dominant plant species within this allotment but is not utilized by cattle but is used by the wintering deer herd.

The Scharf Mesa Allotment currently contains three key areas. The key area locations are plotted on the Map 2 in Appendix A. The table below summarizes the key areas, key plant species, trends for each species, key species objectives and a general trend for each transect. This table represents the period from 2001 to 2012, the years that the density studies were read.

Table 22: Long Term Trend Studies for Scharf Mesa Allotment

Key Area	Key Plant Species	Year				**Key Species Objective	Objective Met?	Density Trend by Species	Overall Density Trend
		2001	2007	2010	2012				
Upper Scharf Mesa Pasture									
KA-2	*Galleta grass	1.8%	2.2%	2.2%	2.2%	5% cover	No	Static	Up
	Blackbrush	12	14	13	13	None	N/A	Static	
	Shadscale	10	15	24	20	None	N/A	Up	
KA-3	Indian ricegrass	3	2	2	1	5 plants	No	Static	Static
	*Galleta grass	3.4%	3.2%	3.2%	2.7%	5% cover	No	Static	
	Shadscale	8	10	14	11	Maintain 5 plants	Yes	Up	
	Fourwing saltbush	4	2	4	2	Maintain 2 plants	Yes	Static	
	Wyoming sagebrush	20	18	21	22	Maintain 15 plant	Yes	Static	
KA-23	*Galleta grass	3.2%	1.7%	3.3%	8.8%	8% cover	Yes	Up	Up
	Shadscale	1	0	0	0	6 plants	No	Static	
	Winterfat	2	0	2	2	Maintain 1 plant	Yes	Static	
	Wyoming sagebrush	2	1	1	1	Maintain 1plant	Yes	Static	

*Galleta Grass is measured based on foliar cover rather than density.

** Objectives were based on averaging the cover data for Galleta Grass in the 3 plots and adding the density data by species in the 3 plots.

The following table shows the key area plant species, percent utilization for each key species, and utilization for all the key species within the key area.

Table 23: Scharf Mesa Allotment Utilization for Key Species

Key Area	Key Plant Species	Percent Utilization for Key Species					
		Years 2001-2016					
		2001-02	2006-07	2007-08	2013-14	2015-16	Average Use by Species
Upper Scharf Mesa Pasture							
KA-2	Indian ricegrass	70%	18%	15%	25%	12%	Light Use
	Galleta grass	36%	10%	20%	9%	12%	Slight Use
	Shadscale	24%	19%	10%	7%	12%	Slight Use
	Wyoming sagebrush	70%	70%	50%	*	*	Heavy Use
	Fourwing saltbush	*	*	40%	*	*	Light Use
	Sand dropseed grass	*	*	*	27%	17%	Light Use
	Average Use by year	Moderate	Light	Light	Slight	Slight	
KA-3	Indian ricegrass	61%	14%	58%	54%	37%	Moderate Use
	Galleta grass	54%	10%	52%	35%	26%	Light Use
	Wyoming sagebrush	46%	63%	68%	58%	59%	Moderate Use
	Shadscale	36%	18%	25%	18%	23%	Light Use
	Fourwing saltbush	50%	*	30%	*	*	Light Use
	Sand dropseed grass	*	*	*	31%	37%	Light Use
	Average Use by Year	Moderate	Light	Moderate	Light	Light	
KA-23	Indian ricegrass	50%	15%	23%	51%	46%	Light Use
	Galleta grass	40%	10%	20%	40%	37%	Light Use
	Sand dropseed grass	80%	*	*	51%	36%	Moderate Use

Key Area	Key Plant Species	Percent Utilization for Key Species					
		Years 2001-2016					
		2001-02	2006-07	2007-08	2013-14	2015-16	Average Use by Species
	Winterfat	*	70%	*	*	*	Heavy Use
	Wyoming sagebrush	60%	66%	54%	67%	79%	Heavy Use
	Shadscale	10%	10%	22%	18%	30%	Slight Use
	Average Use by Year	Moderate	Light	Light	Moderate	Moderate	
Lower Scharf Mesa Pasture							
KA-1 (New Plot)	Indian ricegrass				60%	16%	Light Use
	Galleta grass				40%	3%	Light Use
	Sand dropseed grass				58%	6%	Light Use
	Needle & thread grass				56%	41%	Moderate Use
	Wyoming sagebrush				69%	59%	Heavy Use
	Average Use by Year				Moderate	Light	
Wildlife Plot (New Plot)	Indian ricegrass				57%	23%	Light Use
	Sand dropseed grass				56%	8%	Light Use
	Wyoming sagebrush				69%	58%	Heavy Use
	Galleta grass				*	14%	Slight Use
	Average Use by Year				Moderate	Light	

*Utilization was not done on these plants or year.

Utilization Classes:

No Use	0 to 5% utilization of Key Species
Slight Use	6 to 20% utilization of Key Species
Light Use	21 to 40% utilization of Key Species
Moderate Use	41 to 60% utilization of Key Species
Heavy Use	61 to 80% utilization of Key Species
Severe Use	80 to 100% utilization of Key Species

A majority of the key plant species within Scharf Mesa Allotment has light to moderate use throughout the years except for Wyoming sagebrush had moderate to heavy use each year due to the wintering deer numbers.

A comparison of the long term monitoring data reveals that the overall trend for the plant communities on the Scharf Mesa Allotment is static to upward. Scharf Mesa Allotment apparent trend reports show that all the key areas are in static to upward trend in 2013-2014 (see Appendix E-Apparent Trend Data).

Hotel Mesa Allotment

There are two vegetation types located in this allotment. The dominant type is Blackbrush. Table 24 lists the two types and the amount of acreage for each type within the allotment.

Table 24 Hotel Mesa Allotment Vegetation Types

Type	BLM Acres
Blackbrush	1,000
Salt Desert Scrub	1,642

The important forage grass species on the Hotel Mesa Allotment include; galleta grass, Indian ricegrass, needle and thread grass and sand dropseed grass. Important forage shrub species is Wyoming sagebrush, shadscale and winterfat. These species are the main plant species used to monitor vegetative trend on the Hotel Mesa Allotment. Also blackbrush is one of the dominant plant species within this allotment but is not utilized by cattle.

The Hotel Mesa Allotment currently contains one key area and one old study plot. The key area locations are plotted on the Map 3 in Appendix A. The table below summarizes the key are, key plant species, trends for each species, key species objective and a general trend for each transect. This table represents the period from 1996 to the last time the density studies were readed.

Table 25: Long Term Trend Studies for Hotel Mesa Allotment

Key Area	Key Plant Species	Year				**Key Species Objective	Objective Met?	Density Trend by Species	Overall Density Trend
		1996	2003	2008	2012				
Plot #1	*Galleta grass Spiny Hopsage	6% 5	6% 5	7% 4	11% 4	None None	N/A N/A	Up Static	Up
KA-3	Indian ricegrass	0	1	1	2	5 plants	No	Static	Down
	*Galleta grass	3.7%	2.7%	3%	3.2%	Maintain 5% cover	No	Static	
	Needle & thread grass	6	2	0	0	Maintain 3 plants	No	Down	
	Winterfat	13	20	16	20	Maintain 5 plant	Yes	Up	
	Shadscale	5	0	2	2	Maintain 5plant	No	Down	

*Galleta Grass is measured based on foliar cover rather than density.

** Objectives were based on averaging the cover data for Galleta Grass in the 3 plots and adding the density data by species in the 3 plots.

The following table shows the key area plant species, percent utilization for each key species, and utilization for all the key species within the key area.

Table 26: Hotel Mesa Allotment Utilization for Key Species

Key Area	Key Plant Species	Percent Utilization for Key Species					
		Years 1997-2016					Average Use by Species
		1997-98	2001-02	2007-08	2013-14	2015-16	
Old Plot #1	Indian ricegrass	73%	*	70%	50%	46%	Moderate Use
	Galleta grass	60%	38%	40%	33%	27%	Light Use
	Shadscale	57%	15%	*	13%	20%	Light Use
	Fourwing saltbush	*	*	50%	*	*	Moderate Use
	Sand dropseed grass	70%	70%	55%	43%	35%	Moderate Use
	Average Use by year	Heavy	Moderate	Moderate	Light	Light	
KA-3	Indian ricegrass	75%	45%	50%	63%	52%	Moderate Use
	Galleta grass	44%	32%	36%	23%	17%	Light Use
	Sand dropseed grass	*	*	46%	40%	27%	Light Use
	Winterfat	53%	50%	52%	64%	45%	Moderate Use
	Needle & thread grass	70%	40%	60%	72%	53%	Moderate Use
	Shadscale	52%	16%	30%	11%	20%	Light Use
	Average Use by Year	Moderate	Light	Moderate	Moderate	Light	

*Utilization was not done on these plants or year.

Utilization Classes:

No Use	0 to 5% utilization of Key Species
Slight Use	6 to 20% utilization of Key Species
Light Use	21 to 40% utilization of Key Species
Moderate Use	41 to 60% utilization of Key Species
Heavy Use	61 to 80% utilization of Key Species
Severe Use	80 to 100% utilization of Key Species

A majority of the key plant species within the Hotel Mesa Allotment has light to moderate use throughout the years except for in 1997-98 within old plot #1 had average of heavy use.

A comparison of the long term monitoring data reveals that the overall trend for the plant communities on the Hotel Mesa Allotment is a mix bag of one plot up and one plot down. Hotel Mesa Allotment apparent trend reports show that the key area and old study plot are in an upward trend in 2013-14.

Utah's Standards for Rangeland Health:

The evaluation of Utah's Standards for Rangeland Health was conducted in August 2009 for Sand Flats, Scharf Mesa and Hotel Mesa Allotments. The assessment found that overall these allotments were meeting all the Standards (#1, #2, #3 and #4) and were Properly Functioning. However, there were 180 acres identified within the Sand Flats East Pasture and 300 acres within Sand Flats West Pasture of Sand Flats Allotment, representing 1½ percent of the allotment, that was rated as Functioning-at-Risk and was not meeting the Soil component Standard #1 (item a and c) and Biotic Component Standard #3 (item a and e) . The detailed evaluation of Utah's Standards for Rangeland Health can be found in Appendix D.

3.3.6 Wetlands/Riparian Zones

Sand Flats Allotment:

This allotment has sixteen riparian zones which include: Cane Springs, Cane Creek, Coates Creek, Ryan Creek, Lower Renegade Creek, Dry Gulch Seeps, Buckhorn Draw Seep, Buckhorn Spring, Buckhorn Draw Seep (by old cabin site), Cow Creek, Two No Name Seeps, Sand Flats Seep, Dolores River Oxbow, Dolores River and Colorado River.

There is approximately 32 miles of lotic riparian system (streams) within the allotment and approximately 11½ acres of lentic riparian system (wetlands). Majority of the lotic riparian system or approximately 31¼ miles are Properly Functioning Condition (PFC) and approximately 11½ acres of the lentic riparian system is PFC. There are two small areas that are functioning-at-risk which is less than ¼ mile at Buckhorn Draw Seep (by the old cabin site) and only ½ mile of Coates Creek which is exclude of livestock upstream of the private land. This small area has exclusion of livestock.

Within these riparian zones the following plants species may be found: coyote willow, yellow willow, black willow, squawbush, ash, cattails, alkali muhly, annual rabbit-foot grass, sporobus grass, wild licorice, river birch, sedges, Fremont cottonwood trees, narrow leaf cottonwood trees, horsetail, rushes, tamarisk, phragmites and salt grass. Russian olive trees are found along Coates Creek and Russian knapweed is found along the flood plain on the Colorado River and few places along the Dolores River.

Other washes throughout this allotment which are typical ephemeral desert washes which may flow after a precipitation or snow melt events. Vegetation consists primarily of upland vegetation with a few tamarisks.

Scharf Mesa Allotment:

This allotment has two riparian zones which are Buckhorn Spring and Dolores River. BLM staff recently rated the Buckhorn Spring as in PFC and trend is not apparent at this time. There is a spring development at Buckhorn Spring with troughs and the spring is fenced off from livestock grazing. Dolores River is rated at PFC with an upward trend.

Dolores River riparian zone has the following plant species which are Fremont cottonwood trees, tamarisk trees, coyote willows, yellow willows, phragmites, rushes and salt grass. Buckhorn Spring riparian zone has the following plants species which are Fremont cottonwood trees, tamarisk trees, black willows, coyote willows and salt grass. Russian knapweed is found along the flood plain in a few places along the Dolores River.

Other washes throughout this allotment which are typical ephemeral desert washes which may flow after precipitation or snow melt events. Vegetation consists primarily of upland vegetation with a few tamarisks.

Hotel Mesa Allotment:

This allotment has two riparian zones which are Colorado River and Dolores River. BLM staff recently rated the Colorado and Dolores rivers as in PFC and with an upward trend.

Dolores River riparian zone has the following plant species which are Fremont cottonwood trees, tamarisk trees, coyote willows, yellow willows, phragmites, rushes and salt grass. Colorado River riparian zone has the following plants species which are Fremont cottonwood trees, tamarisk trees, yellow willows, coyote willows, rushes and salt grass. Russian knapweed is found along the flood plain on the Colorado River and few places along the Dolores River.

Other washes throughout this allotment which are typical ephemeral desert washes which may flow after precipitation or snow melt events. Vegetation consists primarily of upland vegetation with a few tamarisks.

4.0 ENVIRONMENTAL IMPACTS

4.1 Introduction

This chapter analyzes the impacts of the alternatives to 1) Livestock Grazing, 2) Soils, 3) Threatened Endangered or State Sensitive Animal Species, Migratory Birds and Wildlife, 4) Threatened, Endangered and BLM Sensitive Plant Species, 5) Vegetation and 6) Wetlands/Riparian zones.

The potential consequences or effects of each alternative are discussed in this section. The intent is to provide the scientific and analytical basis for comparison of the effect of each alternative. This section analyzes the impacts of the alternatives to those resources described in Chapter 3, Affected Environment above. A potential impact is defined as any change or alteration in the existing condition of the environment related to implementation of the alternative, either directly or indirectly. Impacts can be beneficial to the resource (positive) or adverse (negative) and can be either long-term (permanent) or short-term (incidental and/or temporary).

4.2 Direct and Indirect Impacts

Direct effects are caused by the action and occur at the same time and place. Indirect effects are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable.

4.2.1 Alternative A – Proposed Action

4.2.1.1 Livestock Grazing

The proposed action would maintain a productive ranching operation by managing the Sand Flats, Scharf Mesa and Hotel Mesa Allotments for long term sustainability and would continue the use of renewable resource for food production.

The permittees and BLM would implement the new Sand Flats, Scharf Mesa and Hotel Mesa Allotments AMP as stated in the proposed action. The proposed action would impact the livestock operation for the Sand Flats and Hotel Mesa Allotments by resting certain pastures and/or allotment in the spring every four years. Scharf Mesa Allotment would be use during the winter and early spring (March) each year. Utilization standard may result in early removal of cattle from pastures and/or allotments and may require the permittees to feed cattle off these allotments.

The timing of grazing can have a significant impact on plant productivity and vigor, especially if livestock are repeatedly present during plant growth and reproductive stages (McGinty, Baldwin, and Banner 2009), which occur in the spring for shrubs and cool season grasses. If grazing is properly managed during the spring, then plants can build their root systems and increase nutrient storage. The result is more robust plants which are more likely to survive and increase overall forage production (McGinty, Baldwin, and Banner 2009). The livestock would then have more forage available and be able to continue to graze into the future.

The short term and long term impacts would include maintenance of water sources and repair of existing fences under the new management system, permittees would need to move livestock between pastures during the grazing season, and adherence to new terms and conditions. To control the livestock range improvements such as fences would have to be repaired and maintained to ensure that cattle would not have access to other allotments and pastures. Reservoirs and spring need to be maintained to ensure that cattle would have available water within these pastures and/or allotments, which would help with the distribution of livestock over the pastures and allotments which would reduce amount of livestock pressure on natural water sources and help keep the utilization levels at an accessible range. The livestock operator may be impacted in the short term financially by increased labor demands to conduct necessary maintenance and repairs of existing range improvements.

Protein blocks and salt would be placed in outlying areas as necessary to help distribute livestock over the pastures and allotments and would be at least ½ mile from water sources. The distribution of salt and mineral blocks would help get more uniform utilization over these allotments. The livestock operator may be impacted in the short term financially by buying mineral or salt blocks each year.

4.2.1.2 Soils

Sand Flats and Hotel Mesa Allotments

The Sand Flats and Hotel Mesa Allotments by resting certain pastures and/or allotment in the spring every four years which includes saline soils and moderate or high wind erosion soils. This would improve the vegetation as stated in the Vegetation Section 4.2.1.5. This would increase the vegetation which would reduce the accelerated erosion on these soils and improve overall soil conditions. Utilization standard (moderate use) would reduce the heavy use within these the allotments and once the moderate use is reach the livestock would be removed from the allotments or pastures before the grazing season is over.

By managing these allotments for healthy vegetation and soil conditions (achieving rangeland health standards), the soil crust would also be in good condition. A majority of the soil crust is found in shallow soils. Majority of the shallow soils are within the juniper and blackbrush communities (Rizno soil type) within these allotments which are inaccessible to cattle grazing, lack of livestock water, steep slopes, and very rough terrain.

Scharf Mesa Allotment

Scharf Mesa Allotment would be used during the dormant season and early spring (March) each year which includes the Badland soil type. By having no livestock grazing during the critical spring months (April through May) would improve the vegetation as stated in the Vegetation Section 4.2.1.5. This would increase the vegetation which would reduce the accelerated erosion that could occur on this Badland soil type and improve overall soil condition. Utilization standard (moderate use) would reduce the heavy use within this allotment and once the moderate use is reached the livestock would be removed from the allotment or pastures before the grazing season is over.

By managing this allotment for healthy vegetation and soil conditions (achieving rangeland health standards), the soil crust would also be in good condition. Majority of the soil crust is found in shallow soils. A majority of the shallow soils are within the juniper and blackbrush communities (Rizno soil type) within this allotment which some are inaccessible to livestock grazing, due to steep slopes and very rough terrain, and lack water for livestock.

4.2.1.3 Threatened and Endangered or State Sensitive Animal Species, Migratory Birds and Wildlife

Threatened, Endangered, or Candidate Animal Species

Mexican Spotted Owl (MSO)

As noted in Chapter 3, there are minimal suitable habitats within the Proposed Action area. The Knowles Pasture of the Sand Flats Allotment contains approximately 660 acres of suitable MSO nesting habitats along the Colorado River. The majority of the habitat is found below the rims along the steep canyon walls along the river that is not accessible to cattle and therefore there will not be impacts by grazing activities, nor would direct contact from cattle be expected. Along Granite Creek suitable nest habitat is also found but only 165 acres of breeding habitats is found within the Scharf Mesa Allotment and again, this habitat is located below the canyon rims along steep canyon walls that are not accessible by cattle. Above the rims this area also provides over 1,000 acres of suitable MSO foraging habitats. Both suitable habitats areas have USFWS protocol surveys preformed since 2007 and no nesting owls have been identified. The nearest

active nest is approximately 45 miles to the southwest; therefore impacts to nesting MSOs are not expected.

As discussed in the vegetation section, Sand Flats Allotment would have a four year grazing system that would allow the Knowles Pasture to be rested during the spring months every fourth year, thus allowing the plants to build their root systems and increase nutrient storage at a quicker rate. This rotational resting of spring grazing every fourth year would help to maintain the vigor and productivity of the vegetative communities within the Knowles Pasture facilitating plants forage production, seed production, production of good plant vigor, aid in seed dispersal and establishment of young plant species. This would have overall positive effects to the suitable MSO foraging habitats in the area as it would facilitate sufficient cover and forage for the needed MSO prey base habitat. . Scharf Mesa, where the majority of the MSO habitats are foraging habitat that support nesting habitats in the canyons below, the grazing season of use is December 1 through March 31, resulting in continual spring rest. It is expected that MSO foraging areas in Scharf Mesa would maintain vigor and productivity thereby facilitating plants forage production, seed production, production of good plant vigor, aid in seed dispersal and establishment of young plant species that would also facilitate sufficient prey base habitats.

Southwestern Willow Flycatcher (SWFL)

Within the Sand Flats, Scharf Mesa and Hotel Mesa Allotments potential and suitable SWFL habitats and known migrate use. Past survey work done both in the project area and throughout the MFO indicates no nesting SWFL occur in the area therefore nesting SWFL are not expected to be impacted by grazing activities in these there allotments.

Suitable habitats both along the Colorado and the Dolores Rivers and in the lower fork of Coates Creek may continue to be impacted by cattle use. All riparian area associated with federal lands within these allotments are in Properly Functioning Condition. As discussed in section 4.2.2.5 Vegetation, the Sand Flats Allotment is meeting Range Land Health Standards on 98.5 percent of the allotment under current management that does not allow for rotational spring rest. Even without spring rest the vegetation is showing good vigor of plants, increase in reproduction and recruitment of young plants. With rotational spring rest and moderate utilization levels (40 percent to 60 percent) that would be used adjust livestock use on a yearly basis, and including possible early removal from the pasture or allotment, suitable SWFL habitats are expected to continue to facilitate migrant use and the vegetative structure and cover should improve. Four pastures within the Sand Flats Allotment contain suitable habitats; therefore one pasture each year would provide un-grazed vegetation and lack of use during SWFL migration, and further facilitating SWFL needs.

The Scharf Mesa and Hotel Mesa Allotments have minimal spring grazing with cattle removed by March 31 and April 30, respectfully, therefore adequate vegetative growth is expect to be maintained within all suitable SWFL habitats.

Yellow-billed Cuckoo (YBC)

Within the Sand Flats, Scharf Mesa and Hotel Mesa Allotments, there are ample potential and designated critical habitats for the YBCU along the Colorado and Dolores rivers. The nesting

and migrational season for YBCU is June 1 through August 15, therefore no direct impact from cattle grazing area expected as all cattle will be off these allotment by May 31.

As noted above in the SWFL section, and discussed in section 4.2.2.5 Vegetation, the Sand Flats Allotment is meeting Range Land Health Standards on 98.5 percent of the allotment under current management that does not allow for rotational spring rest. With rotational spring rest and moderate utilization levels (40 percent to 60 percent) all potential and critical YBCU habitats are expected to continue to facilitate migrant use and allow for YBCU nesting while facilitating improvements in the vegetative structure and cover. Four pastures within the Sand Flats Allotment contain potential habitats, therefore one pasture each year would provide un-grazed vegetation and lack of use during YBCU migration and nesting season, further facilitating YBCU needs.

Bonytail Chub

Designated critical habitat for the bonytail chub exists along the Colorado River and its floodplain in the Sand Flats and Hotel Mesa Allotments. Hatchery-reared bonytail chub are present in the Colorado River and in the reaches of the Dolores River adjacent to all three allotments. Livestock grazing is generally not considered to be a major factor in the decline of bonytail chub in either river system. However, potential impacts to riparian and aquatic ecosystems from livestock grazing that could exacerbate efforts to improve bonytail chub habitat along the Colorado and Dolores rivers include reduced recruitment and growth of willows and cottonwoods, reduced herbaceous cover in riparian areas, increased erosion and sedimentation rates, and changes to water temperature and nutrient levels resulting from alterations of riparian vegetation associated with livestock grazing (Armour et al. 1991; Stromberg 1993; Krueper et al. 2003). As noted previously, riparian habitats along both the Colorado River and the Dolores River in the vicinity of the Sand Flats, Scharf Mesa, and Hotel Mesa Allotments have been rated as functioning at proper functioning condition (PFC) with an upward trend, and management actions have been implemented to protect riparian habitats, springs, and wetlands in the area from impacts associated with livestock grazing. The proposed action is expected to complement management objectives in these habitats by implementing continued rotational grazing and rest periods and by using monitoring data coupled with flexibility in livestock use to promote adaptive management of grazing.

Humpback Chub

Designated critical habitat for the humpback chub exists along the Colorado River and its floodplain in the Sand Flats and Hotel Mesa Allotments. In addition, one of the five remaining viable populations of Humpback chub is found in the portion of the Colorado River adjacent to the Sand Flats Allotment. Livestock grazing is probably not a factor that plays a primary role in directly impacting humpback chub populations, but must be considered as a factor with the potential to influence management actions undertaken related to restore or enhance humpback chub habitats. The proposed action is expected to promote responsible and adaptive grazing practices that are consistent with management objectives for humpback chub habitats.

Colorado Pikeminnow

Designated critical habitat for the Colorado pikeminnow exists along the Colorado River and its floodplain in the Sand Flats and Hotel Mesa Allotments. Livestock grazing is probably not a

primary and direct factor in the decline of Colorado pikeminnow populations over recent decades. However, excessive livestock grazing has the potential to negatively impact riparian and aquatic habitats in a variety of ways. BLM evaluations of riparian habitats along the Colorado River in the vicinity of the Sand Flats and Hotel Mesa Allotments indicate that they are at proper functioning condition and exhibiting an upward trend. The proposed action is expected to enhance this trend through its emphasis on rotational grazing, rest periods, and adaptive grazing management facilitated by monitoring of range conditions.

Razorback Sucker

Razorback suckers occur at low population densities in the Colorado River adjacent to the Sand Flats and Hotel Mesa Allotments, which is designated as critical habitat for the species. Hatchery-reared razorback suckers are also present in the reaches of the Dolores River adjacent to all three allotments. Livestock grazing activities along the Colorado and the Dolores rivers have the potential to alter riparian vegetation and rates of sedimentation in ways that negatively impact habitats of razorback suckers. However, as noted previously, riparian habitats along both the Colorado River and the Dolores Rivers in the vicinity of the Sand Flats, Scharf Mesa, and Hotel Mesa Allotments are considered to be at proper functioning condition and exhibiting upward trends. The proposed action is expected to enhance these trends for reasons discussed above.

Utah BLM Sensitive Species

The bald eagle and the three sensitive fish species may or are known to inhabitant the Sand Flats, Scharf Mesa and Hotel Mesa Allotments.

Bald Eagle

Livestock grazing in riparian areas may lead to adverse environmental effects, including increased soil erosion, degradation of stream banks, introduction of noxious weeds, and reduction of viable cottonwood sapling recruitment and reduction in populations of suitable prey species (Chaney et al. 1990; Kaufman and Krueger 1984; Menke et al. 1996). These effects may require years to accumulate to detrimental levels, but cumulatively may lead to deterioration of active bald eagle nesting and communal winter roosting habitats.

The majority of riparian areas associated with federal lands within these allotments are in Properly Functioning Condition Within the Sand Flats Allotment rotational spring rest and moderate utilization levels (40 percent to 60 percent) that would be used adjust livestock use on a yearly basis, and including possible early removal from the pasture or allotment would ensure riparian areas healthy riparian areas that continue to maintain and improve adequate vegetative structure and cover. It is expected that soil erosion and stream banks degradation would not increase due to the continuation of grazing along the Colorado and Dolores rivers. Currently existing noxious weeds, including tamarisk may be reducing viable cottonwood sapling recruitment but implementing spring rest rotation in the Sand Flats Allotment is not expected to increase noxious weeds and tamarisk infestations.

Riparian areas within Hotel Mesa and Scharf Mesa Allotments are in Properly Functioning Condition and have an shorter season of use that removes cattle prior to the later period of spring green-up, therefore facilitating adequate riparian vegetate growth.

Sensitive Species of Fish

Known habitats of the three sensitive fish species in the vicinity of the Sand Flats, Scharf Mesa, and Hotel Mesa Allotments are restricted to the mainstem of the Colorado River and the Dolores River. Livestock grazing in the riparian habitats associated with these rivers has the potential to cause detrimental impacts to native riparian vegetation, bank stability, and water quality in a manner that contributes to the continued decline of these species (Chaney et al. 1990; UDWR 2006). At present, all riparian areas associated with Colorado and Dolores Rivers along these allotments are rated at proper functioning condition with an upward trend, and the two most significant impacts to populations of roundtail chub, bluehead suckers, and flannelmouth suckers in the area are thought to be introductions of nonnative fishes and altered flow regimes (UDWR 2006). The proposed action includes moderate grazing levels, rotational spring rest periods, and adjustment of livestock use in response to monitoring information. These strategies are expected to contribute to ongoing management efforts to increase the relative abundance and diversity of native vegetation in riparian habitats along the Colorado and Dolores rivers as a means of improving channel and floodplain conditions to the benefit of the three sensitive fish species.

Migratory Birds and Raptors

A variety of migratory bird and raptor species use these allotments for breeding, nesting, foraging and migratory habitats. The ecological condition of the range directly affects the quality and quantity of the vegetative communities that support migratory birds.

These allotments would be managed to achieve the objectives described in the Utah Standards for Rangeland Health, including maintaining desired species “at a level appropriate for the site and species involved”. Additionally, riparian areas would be managed in accordance with the Utah BLM Riparian Policy for Proper Functioning Condition. Riparian areas offer high quality breeding and foraging habitat to migratory birds due to the diversity and density of vegetation and insect prey. At the present time all riparian areas within Scharf Mesa and Hotel Mesa Allotments are properly functioning and are in an upward trend. Within the Sand Flats Allotment all riparian areas are properly functioning except for two small riparian areas that are functioning-at-risk which amounts to ¼ mile at Buckhorn Draw Seep and ½ mile of Coates Creek which is within a livestock enclosure. The proposed action would implement rotational spring grazing in the Sand Flats Allotment and moderate utilization levels (40 percent to 60 percent) adjusting livestock use annually and possible early removal if needed. These management measures would ensure riparian areas remain health and would facilitate improved vegetative structure and cover thus benefiting migratory birds and raptors and their habitats.

General Wildlife

Animals such as small mammals, reptiles, songbirds and insects rely on the cover and forage provided by the vegetative community they inhabit. This vegetative community offers forage and cover in the forms of leaves, stems, roots, seeds, pollen, canopy cover and duff for various animals and insects. Predator species such as mountain lions, bobcats, coyotes, foxes, badgers, birds and raptors are dependent upon the quantity and quality of their prey base, which is typically smaller mammals, reptiles, songbirds and insects that are reliant on the vegetative base. The ecological condition of the range directly affects the quality and quantity of the vegetative communities that support the wildlife in these allotments.

Big Game Species

Mule Deer and Elk Habitat

Grazing, as well as the physical presence of cattle, can have negative impacts on wild ungulates not only through vegetation limitation, but by causing behavioral changes and altering activity budgets that make foraging less productive (Chaikina and Ruckstuhl, 2006). In Chaikina and Ruckstuhl (2006), Kie [1996] reported that a study of female mule deer in California's Sierra Nevada showed that deer exhibited avoidance behavior and temporal partitioning of habitat use when cattle were present. Chaikina and Ruckstuhl (2006) and Stewart et al, [2002] reported cattle avoidance behavior by elk and mule deer, who adjusted their use of the area, moving away from cattle, possibly to avoid forage competition.

Dietary overlap exists between mule deer, elk and cattle, as discussed in Chapter 3 and the diversity of plants in the diets is similar for deer, elk, and cattle. Deer are more adapted to browsing and selecting better quality plants and cattle have better ability to digest low-quality grasses (Chaikina and Ruckstuhl, 2006), therefore the greatest overlap may occur between elk and cattle use. Thill and Martin (1989) showed that diet overlap between white-tailed deer and cattle on pastures in central Louisiana was greatest in the winter (30.7 percent). However, the intensity of cattle grazing did not have a major impact on the diet overlap. The study suggests that late fall and winter cattle grazing can be detrimental to the availability of forage for deer. Also in Chaikina and Ruckstuhl (2006) and Ortega et al, (1997) showed diet overlap between deer and cattle in Texas was greatest (60 percent) in the winter and spring, under limited forage conditions, that resulted from short duration heavy stocking treatment. Diet overlap increases when forage becomes less available, which usually happens in winter and early spring when snow limits access to forage. But Chaikina and Ruckstudhl (2006) and Gordon (1988) also found that winter cattle grazing in Scotland caused an increase in the amount of new vegetation in the following spring. Red deer also preferred to graze in spring on the areas that were grazed by cattle in the previous winter and had more fawns per hind living on grazed areas (Chaikina and Ruckstuhl, 2006).

Winter cattle grazing may increase the potential for spatial and forage competition, especially between elk and cattle. Spatial and forage competition may increase during heavy snowfall years but with adequate stocking rates there is sufficient acreage within these allotments to provide adequate deer and elk winter range availably during cattle use.

As discussed in the vegetation section below, the four year rest rotational system within the Sand Flats and Hotel Mesa Allotments would positively benefit plant species over the current grazing management. The pastures that are rested in the spring would allow the plants to build their root systems and increase nutrient storage at a quicker rate, therefore potentially providing improved foraging areas for wintering deer and elk. The proposed action also has the potential to positively impact winter forage for deer and elk by maintaining good rangeland health throughout these allotments. Based on history of grazing in these allotments and current rangeland health conditions, moderate levels of utilization (40 percent-60 percent) is expected to continue to benefit desired plant species and maintain rangeland health.

Desert Bighorn Sheep Habitat

Bighorn sheep impacts from livestock may include forage competition, habitat fragmentation, and disease. There is mixed evidence that cattle and bighorn sheep directly compete for forage. (Monson and Sumner 1980, USFWS 1981, Krausman and others 1996). In Aravaipa Canyon, Arizona, the average percentage yearly dietary overlap between cattle and bighorn sheep was 35 percent (Dodd and Brady 1986). Cattle, however, are generally unable to negotiate the steep rocky habitat where bighorn spend the majority of their time, implying some degree of habitat partitioning and minimizing the potential for forage competition (Monson and Sumner 1980, Dodd and Brady 1986), though some overlap in habitat use is possible.

In Idaho, Bissonette and Steinkamp (1996) showed that California bighorn sheep reduced their home range size and decreased their distance to escape terrain as cattle were moved to pastures that were closer and more visible to the bighorn. The bighorn sheep fled the area when cattle approached to within about 2,600 feet (800 meters) (Bissonette and Steinkamp 1996). Bissonette and Steinkamp's (1996) results suggest that the "social intolerance" exhibited by bighorn sheep toward cattle may impose greater limitations on their distribution and habitat use than competition for forage.

The role of cattle in the spread of disease to bighorn sheep is poorly documented and not well understood (Krausman and others 1996).

Currently bighorn habitats within these allotments are not occupied by bighorn sheep, therefore no direct impacts to bighorn area expected. Implementation of a rotational spring rest systems along with ensuring grazing levels are maintained at or below moderate utilization levels is expected to improve the range, though current Rangeland Health Standards are being met in these habitats. Future occupancy of bighorn may be impacted by the presents of cattle within these habitats as there is potential for forage competition and social intolerance to occur when these allotment have active grazing occurring.

4.2.1.4 Threatened and Endangered Species and BLM State Sensitive Plant Species

Threatened, Endangered, or Candidate Plant Species

Jones Cycladenia (*Cycladenia humilis* var. *jonesii*)

All the known populations of Jones Cycladenia found in the MFO are located on very steep slopes which are inaccessible to cattle. There are no known populations of Jones Cycladenia within the Sand Flats, Scharf Mesa and Hotel Mesa Allotments.

Ongoing and potential anthropogenic impacts to habitat include: off-highway vehicle (OHV) use; oil, gas, and mineral exploration, including uranium mining and tar sands; and livestock grazing (although the rule, 51 FR 16526, May 5, 1986, notes the probability of grazing causing serious damage was low).

The proposed action would impact the Sand Flats and Hotel Mesa Allotments by resting certain pastures and/or allotments in the spring every four years. By having this spring rest would increase the native vegetation within these two allotments (as stated in Vegetation Section). Cattle do not seek out Jones' Cycladenia if there is good available livestock forage in the area. Cattle prefer other native vegetation over Jones's Cycladenia.

Scharf Mesa Allotment would be used during the dormant grazing season and early spring (March) each year. By resting the allotment during the critical spring months (April through May) will improve the vegetation as stated in the Vegetation Section.

Utilization standard (moderate use) would reduce the heavy use within these allotments and once the moderate use is reached the livestock would be removed from these allotments or pastures before the grazing season is over. This would avoid any over grazing of the Jones' Cycladenia habitat within these allotments. With the Proposed Action there would be low impacts to Jones' Cycladenia habitat by livestock grazing within these allotments.

Utah BLM Sensitive Species

There is only one Utah Sensitive plant species habitat which is the Dolores rushpink may inhabit the Sand Flats, Scharf Mesa and Hotel Mesa Allotments. There are no known populations of this plant within these allotments.

The impacts to Dolores rushpink is the same as Jones' Cycladenia as stated above. With the Proposed Action there would be low impacts to Dolores rushpink habitat by livestock grazing within these allotments.

4.2.1.5 Vegetation

Plants use water and carbon dioxide in the presence of sunlight to create carbohydrates and oxygen (a process called photosynthesis). Plants use carbohydrates as an energy source for growth. When plant growth slows and more carbohydrates are produced than needed for growth, the surplus carbohydrates are stored. These reserves are important for the plant's survival over winter and for initiation of plant growth in spring. Regrowth after grazing depends on energy being produced either by the remaining leaf area, or from the carbohydrate reserves. (Ontario Ministry of Agriculture and food. Publication 19, Pasture Production)

Plant growth starts slowly in the spring. Carbohydrate reserves stored in stem bases, roots, rhizomes and stolons have to be mobilized before they can be used to fuel growth. Once leaf area develops, growth quickens as the plant has an immediate source of energy from photosynthesis. After this vegetative period of fast growth is over, the plant becomes reproductive, growth slows and carbohydrate reserves are replenished. (Ontario Ministry of Agriculture and food. Publication 19, Pasture Production)

Grazed plants left with enough leaf area to continue photosynthesizing regrow at a quicker rate, as they are not dependent on carbohydrate reserves. Plants frequently closely grazed can be damaged because they are unable to restore their carbohydrate reserves. With each defoliation, the plant's reserves are reduced and with time, depleted. In addition, any intensity of grazing causes plant root damage; root weight, length and vigor are reduced. The extent of the damage increases with the severity of the defoliation. (Ontario Ministry of Agriculture and food. Publication 19, Pasture Production)

The proposed action would incorporate the utilization standards stated in the 2008 RMP which allow for moderate use throughout these allotments and when moderate use is reached livestock

would be removed from the allotment(s) or pasture(s). Utilization standards for these allotments would help with proper grazing of the area which would improve the plant communities within these allotments. By following the utilization standards (Moab RMP 2008) these levels of use would help maintained with the proposed management efforts aimed at proper upland utilization and improved livestock distribution due to herding, water and supplement placement. Perennial grasses vary in sensitivity to utilization, but a majority of them sustain little damage if grazing stops in time for them to complete seed maturation (Heady and Child, 1994). It is expected that the upland vegetation would continue to improve over the life of the grazing permit. With reasonable climatic conditions, the proposed action has the potential to positively impact by maintaining good rangeland health throughout these allotments. Based on history of grazing in these allotments and current rangeland health conditions, this level of utilization (40 percent-60 percent) is expected to continue to benefit desired plant species and maintain rangeland health.

There is the potential to have a few small areas of these allotments to be impacted by livestock grazing. These impacts are expected to be around water developments, corrals, salting and mineral sites and trailing areas. When cattle are on these allotments they need water and are crucial for their sustainability, cattle would congregate around water developments and may cause impacts to soils and vegetation around these developments.

Under dispersed grazing systems, livestock use is often concentrated in some areas and negligible in others, often resulting in degradation of plant communities in areas that are used the heaviest. Many variables such as water location, forage availability, topography and aspect, which exist at multiple scales, influence which areas of an allotment would be selected for use by livestock.

Sand Flats Allotment

Under the proposed action, livestock within the Sand Flats Allotment would be confined to specific areas throughout the year and moved when temporal or vegetative parameters have been reached. The timing of grazing can have a significant impact on plant productivity and vigor, especially if livestock are repeatedly present during plant growth and reproductive stages (Mcginty, Baldwin, and Banner 2009), which occur in the spring for shrubs and cool season grasses. If grazing is properly managed (AMP) during the spring, then plants can build their root systems and increase nutrient storage. The result is more robust plants which are more likely to survive and increase overall forage production (Mcginty, Baldwin, and Banner 2009).

The proposed action has the potential to positively benefit plant species over the no action alternative. Sand Flats Allotment would have a four year grazing system that would allow one to two pastures each year to be rested during the spring months. The pastures that are rested in the spring would allow the plants to build their root systems and increase nutrient storage at a quicker rate, result in less impact to vegetation in the those pastures. However the pastures that are grazed during the spring could have a negative impact on the plants for that year due to the lack of spring rest during that year. Every one in four years each pasture would be rested during the spring time.

Due to the lack of water within the Buckhorn Pasture it would be grazed only in the fall, winter and early spring. By having dormant season grazing and by allowing the critical spring months

of April and May to be rested would benefit the plants by allowing time for plant regrowth and building their root reserves which would be less impact to vegetation. By resting certain pastures each year during critical growing season in April and May would have a benefit to the cool season grass and shrubs.

At the present time Sand Flats Allotment is meeting all the standards except for two small areas within the Sand Flats West Pasture which is approximately 300 acres and one small area in Sand Flats East Pasture which is approximately 180 acres of upland which is functioning-at-risk. A grazing management system provides the foundation for controlling/managing grazing pressure on both biotic and abiotic components of the Sand Flats Allotment. The AMP would allow for rest with certain pasture each year during the spring growing season and complete summer rest for the plant communities. As a general rule, cool season grasses begin to grow during the latter part of March, and with grazing system certain pastures would be rested during March, April and May, this would help benefit the each pasture within this allotment and should improve the 480 acres of uplands that is functioning-at-risk in the future. By keeping AUM's the same, following the utilization standards, and developing a new AMP allowing for more spring rest, range condition and trend should improve in the future.

Scharf Mesa Allotment

Scharf Mesa Allotment dispersed grazing would occur throughout the season of use which would often concentrate livestock in some areas and negligible in others, often resulting in degradation of plant communities in areas that are used the heaviest. Under the proposed action Scharf Mesa Allotment once utilization standards are reached (moderate use) livestock would be removed from this allotment for the rest of the grazing season. The past use shows it has not impacted the vigor, plant growth, reproduction of seeds or establishment of the young plants and forage production in this allotment. It should be noted the last reading on this allotment was during the 2012 drought year.

Scharf Mesa Allotment would be grazed during the dormant season and early spring (March). As a general rule, cool season grasses begin to grow during the latter part of March and the majority of the spring growth occurs during April and May. This allotment would be rested during the critical spring months of April and May. At the present time Scharf Mesa Allotment is meeting all the rangeland health standards. This alternative for Scharf Mesa Allotment is the same as the No Action Alternative. The impacts to Scharf Mesa Allotment would be the same as the Alternative B (No Action) with the exception that utilization standards would be enforced in this alternative.

Hotel Mesa Allotment

Under the proposed action for the Hotel Mesa Allotment once utilization standards are reached (moderate use) livestock would be removed from this allotment for the rest of the grazing season. The number of livestock would be low within this allotment and the past use as shown that trend is a mix bag of upward and down ward trend which may be impacting and not impacting certain areas of the allotment with the vigor, plant growth, reproduction of seeds or establishment of the young plants and forage production in this allotment. I should be noted the last reading on this allotment was during the 2012 drought year.

The timing of grazing can have a significant impact on plant productivity and vigor, especially if livestock are repeatedly present during plant growth and reproductive stages (Mcginty, Baldwin, and Banner 2009), which occur in the spring for shrubs and cool season grasses. If grazing is properly managed during the spring, then plants can build their root systems and increase nutrient storage. The result is more robust plants which are more likely to survive and increase overall forage production (Mcginty, Baldwin, and Banner 2009).

A grazing management system provides the foundation for controlling/managing grazing pressure on both biotic and abiotic components of the Hotel Mesa Allotment. As a general rule, cool season grasses begin to grow during the latter part of March, and with this grazing system this allotment would have some spring rest during March and April, this would help benefit the allotment. The proposed action has the potential to positively benefit plant species over the no action alternative. Hotel Mesa Allotment would have a four year grazing system that would allow the allotment to be rested in March through April one in four years and May would be rested every year. There would be summer and fall rest each year which would benefit the warm season grasses. When this spring rest would allow the plants to build their root systems and increase nutrient storage at a quicker rate, result in less impact to vegetation in the this allotment. However when the allotment is grazed during April, minor impact on the plants for that year due to the April grazing and since the grazing season ends on April 30th this allotment would have no grazing in May which allow the plants to build their root systems, and increase nutrient storage. By keeping AUM's the same, following the utilization standards, and developing a new AMP allowing for more spring rest, range condition and trend should improve in the future. At the present time Hotel Mesa Allotment is meeting all the rangeland health standards. By allowing some spring grazing it would help reduce the cheatgrass production in certain areas within this allotment which would reduce the fire danger.

4.2.1.6 Wetlands/Riparian Zones

Sand Flats Allotment

Wetland and riparian zones with the Sand Flats Allotment are found along eight stream/river corridors, seven seep/spring systems, and one oxbow pond. All of the lotic riparian areas and all but one of the springs/seeps are currently considered to be at proper functioning condition (PFC). However, these areas are particularly prone to impacts from livestock grazing because cattle tend to concentrate at water sources and seek shade beneath the canopy of riparian trees and shrubs. Livestock grazing can result in major reductions of herbaceous vegetation in riparian areas, which can, in turn, reduce the diversity and abundance of wildlife populations (Krueper et al. 2003). In addition, selective browsing by cattle can severely limit recruitment of willows and cottonwoods, reduce the diversity and structural complexity of riparian plant communities, and favor the spread of invasive trees and shrubs (Armour et al. 1991; Auble and Scott 1998). Under the proposed action, livestock will be moved when monitoring information indicates that certain vegetative parameters have been reached, and each pasture will be rested a minimum of once every four years during April and May. This approach will allow for a more flexible grazing regime than is currently being used, and is expected to improve management of wetlands and lotic riparian areas.

Scharf Mesa Allotment

The Scharf Mesa Allotment encompasses riparian zones along the Dolores River and Buckhorn Spring, which are both considered to be at proper functioning condition. In addition, the springhead at Buckhorn Spring is fenced to exclude livestock. Under the proposed action and the no action alternative, dispersed livestock grazing occurs during the dormant season and during early spring, and a rest period begins in April. This approach minimizes impacts to riparian vegetation resulting from livestock grazing. The proposed action differs from the no action alternative in that it stipulates that livestock be moved when utilization standards are reached. This approach would allow for a moderate and flexible grazing regime that is expected to facilitate effective management of riparian areas.

Hotel Mesa Allotment

The Hotel Mesa Allotment includes two riparian zones along the Colorado and Dolores rivers, both of which have recently been rated by BLM staff as functioning at proper functioning condition and trending upward. The proposed action calls for a grazing regime in which livestock are present during January 1 through April 30 (as does the no action alternative), but rests the allotment once every four years during March and April. This rest period has the potential to enhance the upward trend evident in the riparian zones at the Hotel Mesa Allotment.

4.2.1.7 Monitoring and/or Compliance

Monitoring in the Moab Field Office is conducted following guidance in the Draft Utah Monitoring Manual for Upland Rangelands. The Sand Flats, Scharf Mesa and Hotel Mesa Allotments have recently been converted to nested frequency and line point intercept for long term trend monitoring. The base line data was collected in 2012 and the next monitoring cycle scheduled for Sand Flats Allotment is in 2016 and every three to four years thereafter. The next monitoring cycles for Scharf Mesa Allotment is scheduled for 2016 and every five to seven years thereafter or earlier if needed. The next monitoring cycle for Hotel Mesa Allotment is scheduled for 2016 and every eight to ten years thereafter or earlier if needed. Scharf Mesa and Hotel Mesa Allotments are low priority allotments due to the size and condition of the rangelands within these allotments.

Riparian monitoring by using the Riparian Area Management TR1737-15 1998 and TR1737-16 1999, Revised 2003. A User Guide to Assessing Proper Functioning Condition (PFC) and the Supporting Science for Lotic Areas and Lentic Areas. Studies on riparian areas would be done when an issue(s) arise or when grazing management changes.

4.2.2 Alternative B – No Action (Continuation of Current Permit Terms)

4.2.2.1 Livestock grazing

This alternative would not implement a grazing system that allows for some spring rest. There could be spring grazing every year within these allotments. These allotments would keep the number of cattle, season of use, and AUMs the same as the existing permit. There would be no utilization standards for these allotments. Some areas may receive heavy use without the utilization standards.

With the no action alternative Range Land Health Standards would continue to be met for these three allotments except for 180 acres and 300 acres within the Sand Flat Allotment which may continue to have static to slightly up trend. Compared to Alternative A it would take more time to meet the objectives for the 160 and 300 acres.

Normal ranching operations would include the maintenance of existing ponds, fences, spring, and protein/salt block placement would have the same impact as the proposed action. The no action alternative would maintain a productive ranching operation by managing the allotments for long term sustainability and would continue the use of a renewable resource for food production. The livestock operator may be impacted in the short term financially by increased labor demands to conduct necessary maintenance and repairs on all existing range improvement projects. Refer to Section 4.2.2.5 Vegetation Section for analysis of effects of livestock grazing on vegetation.

4.2.2.2 Soils

There would be no utilization standards (moderate use). Without the utilization standards there may be some heavy use areas within these allotments.

Sand Flats Allotment

The majority of the Sand Flats Allotment (98.5 percent) is meeting Rangeland Health Standards for soils except for one small area within the Sand Flats East Pasture and two small areas within the Sand Flats West Pasture. Without some spring rest these small areas (160 acres) in Sand Flats West Pasture will continue to have an increase in some soil moisture loss through surface evaporation due to an increase in bare ground soil moisture will continue to be depleted in the top horizons during the spring months due to rapid growth of annual species such as cheatgrass and moderate to extreme reduction of infiltration due to the increase in cheatgrass and reduction of perennial plants. The second small area (140 acres) within Sand Flats West Pasture will continue to have extreme reduction in infiltration due to the increase in cheat grass and reduction of perennial plants species. The third small area of 180 acres within Sand Flat East Pasture will continue to have extreme reduction in infiltration due to the increase in cheat grass and reduction of perennial plant species.

Rangeland Health Assessments for majority of this allotment shows under the No Action Alternative at the present time the upland sites exhibited sufficient cover and more litter relative to site potential to protect the soil surface. Soil surface has increased at the upland sites due to annual inputs of herbaceous vegetative cover, biological soil crust and litter. The indicators of erosion showed no erosion to minor erosion at the upland sites. Soil pedestals are not common and large connected areas of bare ground are not evident at these sites.

Scharf Mesa and Hotel Mesa Allotments

There is no impact to soils expected from this alternative for Scharf Mesa and Hotel Mesa Allotments. These two allotments are meeting Rangeland Health Standards for soils with the no action alternative.

Rangeland Health Assessments for these allotments shows under the No Action Alternative at the present time the upland sites exhibited sufficient cover and more litter relative to site potential to protect the soil surface. Soil surface has increased at the upland sites due to annual inputs of herbaceous vegetative cover, biological soil crust and litter. The indicators of erosion showed no erosion to minor erosion at the upland sites. Soil pedestals are not common and large connected areas of bare ground are not evident at these sites.

4.2.2.3 Threatened and Endangered or State Sensitive Animal Species, Migratory Birds and Wildlife

Threatened, Endangered, or Candidate Animal Species

Mexican Spotted Owl

Direct impacts to nesting MSO would be the same as the proposed action as discussed in the MSO section of chapter 4.2.1.3. The majority of the habitat in both the Sand Flats and the Scharf Mesa Allotments is found below the rims along the steep canyon walls below the river that is not accessible to cattle and therefore will not be impacted by grazing activities, nor would direct contact from cattle be expected. The no action alternative would allow the continuation of dispersed grazing through the Sand Flats Allotment until May 31 and in the Scharf Mesa Allotment through March 30 without rotational spring rest and moderate utilization requirements. The existing grazing system in the Sand Flats Allotment is maintaining Range Land Health Standards on 98.5 percent of the allotment and on all of the Scharf Mesa Allotment as well. Without spring rest and moderate utilization requirements vegetative improvement is expected to occur at a slower rate than the proposed action and areas that support suitable MSO habitats in the Sand Flats and Scharf Mesa Allotments are not expected to be negatively impacted.

Southwestern Willow flycatcher (SWFL)

Direct impacts to nesting SWFL would be the same as the proposed action as discussed in the SWFL section of chapter 4.2.1.3; Past survey work done indicates no nesting SWFL occur in the area therefore nesting SWFL are not expected to be impacted by grazing activities in these allotments.

Suitable habitats both along the Colorado and the Dolores Rivers and in the lower fork of Coates Creek may continue to be impacted by cattle use, though the majority of riparian areas associated with federal lands within these allotments are in Properly Functioning Condition under the current grazing system (no action). The current grazing system does not offer rotational spring rest and restricted utilization but the vegetation is showing good vigor of plants, increase in reproduction and recruitment of young plants, therefore negative cover and structure that migrant SWFLs rely on is expected to be maintained but not improved through periodic spring rest. The no action alternative would also not provide one pasture each year with un-grazed vegetation therefore migrant SWFL would not have the opportunity to utilize areas where grazing and spring utilization has not occurred.

The Scharf Mesa and Hotel Mesa Allotments would continue to have minimal spring grazing with cattle removed by March 31 and April 30, respectively, therefore adequate vegetative growth is expected to be maintained within all suitable SWFL habitats.

Yellow-billed Cuckoo (YBC)

The nesting and migrational season for YBCU is June 1 through August 15, therefore no direct impact from cattle grazing the area is expected as all cattle will be off these allotments by May 31.

Impacts to YBCU habitats are expected to be similar to the impacts discussed above in the SWFL section.

Bonytail Chub

As discussed in section 4.2.1.3, there are a variety of potential impacts to riparian and aquatic ecosystems from livestock grazing that could exacerbate efforts to improve bonytail chub habitat along the Colorado and Dolores rivers in the vicinity of the Sand Flats, Scharf Mesa, and Hotel Mesa Allotments. Riparian habitats along the Colorado and Dolores Rivers are rated at proper functioning condition with an upward trend; but without the proposed action, the ability to adjust management practices in an adaptive manner, based on monitoring data, would be restricted. This could limit the effectiveness of management practices and ongoing habitat restoration efforts that have the potential to improve habitats that once supported viable populations of bonytail chub in the Colorado and Dolores rivers.

Humpback Chub

Effective management of livestock grazing is an important tool in improving the integrity of riparian and aquatic habitats along portions of the Colorado River inhabited by humpback chub. If the proposed action is not implemented, efforts to manage grazing in an adaptive manner that is responsive to changing riparian conditions could be hampered. This could limit the effectiveness of management efforts and ongoing riparian restoration efforts in portions of the Colorado River inhabited by humpback chub. This is an especially important consideration for management of the Sand Flat Allotment, which borders one of the five remaining viable populations of humpback chub.

Colorado Pikeminnow

As discussed previously, potential impacts to riparian and aquatic ecosystems from livestock grazing could contribute to impacts to riparian and floodplain habitats resulting from impaired flow regimes. If the proposed action is not implemented, efforts to manage grazing in an adaptive manner that is responsive to changing riparian conditions could be restricted, which could also impair efforts to manage riparian and floodplain habitats in a manner conducive to improving conditions of potential nursery habitats of Colorado pikeminnow.

Razorback Sucker

Effective management of livestock grazing is an important tool in improving the integrity of riparian and aquatic habitats along the portions of the Colorado and Dolores rivers inhabited by razorback suckers. Razorback suckers are known to reproduce in the Colorado River downstream from the Dolores Triangle. In addition, hatchery-reared razorback suckers currently

inhabit the lower Dolores River. Although riparian habitats along the Colorado River are rated at proper functioning condition and trending upward in areas adjacent to the Sand Flats and Hotel Mesa Allotments, effective management of grazing practices along the Colorado River floodplain will be essential in maintaining this trend. Without the proposed action, the ability to adjust management practices in an adaptive manner would be restricted, thereby limiting opportunities for adaptive management of grazing in response to changing trends and conditions. Adaptive grazing management will also be important in efforts to restore conditions to floodplains along the Dolores River, which once provided nursery habitat for razorback suckers.

Utah BLM Sensitive Species

Bald Eagle

As noted in the Bald Eagle section of chapter 4.2.1.3, livestock grazing in riparian areas may lead to adverse environmental and cumulatively may lead to deterioration of active bald eagle nesting and communal winter roosting habitats. Under the current grazing system the majority of riparian areas associated with federal lands within these allotments are in Properly Functioning Condition and this grazing system does not offer rotational spring rest and restricted utilization. Under the no action alternative riparian vegetation is expected to be maintained but not improved through periodic spring rest and restricted utilization. The Scharf Mesa and Hotel Mesa Allotments would continue to have minimal spring grazing with cattle removed by March 31st and April 30, respectfully, therefore adequate vegetative growth is expected to be maintained. It is expected that soil erosion and stream banks degradation would not decrease due to the continuation of grazing along the Colorado and Dolores rivers under the no action alternative. Existing noxious weeds, including tamarisk may be reducing viable cottonwood sapling recruitment but the lack of spring rest rotation in the Sand Flats Allotment is not expected to increase noxious weeds and tamarisk infestations.

Riparian areas within Hotel Mesa and Scharf Mesa Allotments are in Properly Functioning Condition and have a shorter season of use that removes cattle prior to the later period of spring green-up, therefore facilitating adequate riparian vegetative growth.

Sensitive Fish Species

Ongoing and recently planned habitat restoration projects aimed at reducing densities of tamarisk (*Tamarix* spp.), Russian olives, and other invasive riparian plants are expected to change floodplain conditions and restore native riparian vegetation in a manner that promotes more dynamic fluvial process, improves nutrient cycling, and favors the formation of more complex river channel habitats (Mineau et al. 2012; Keller et al. 2014). This is a major emphasis in the current management strategy in Utah for improving habitats of roundtail chub, bluehead suckers, and flannelmouth suckers (Laub et al. 2015). The ability to implement flexible grazing practices that complement efforts to restore or enhance impaired habitats of sensitive species of fish would be restricted under the no action alternative.

Migratory Birds and Raptors

As discussed in section 4.2.2.5 Vegetation, the Sand Flats Allotment is meeting Range Land Health Standards on 98.5 percent of the allotment and the majority of the riparian areas on federal lands in all three allotments are at PFC under current management that does not allow for rotational spring rest and restricted utilization. Without the proposed rotational spring rest and

moderate utilization levels that would be used adjust livestock use on a yearly basis, and including possible early removal from the pasture or allotment, migratory bird habitats are expected to continue to facilitate migrant and nesting use as the vegetative structure and cover should be maintained.

Within the Sand Flats Allotment spring grazing would be allowed. Livestock would have direct, short term contact, with migrants or nesting birds during breeding and nesting season (May 1 to July 31). The Scharf Mesa and Hotel Mesa Allotments would continue to have minimal spring grazing with cattle removed by March 31 and April 30, respectfully, therefore prior to the migratory bird nesting season. The no action alternative would benefit migratory birds and raptors less than the proposed action.

General Wildlife

As discussed above the Sand Flats Allotment is meeting Range Land Health Standards on 98.5 percent of the allotment and the majority of the riparian areas on federal lands in all three allotments are at PFC under current management that does not allow for rotational spring rest and restricted utilization. Without the proposed rotational spring rest and moderate utilization levels that would be used adjust livestock use on a yearly basis, and including possible early removal from the pasture or allotment, wildlife habitats are expected to continue to facilitate current wildlife use.

Big Game Species

Mule Deer and Elk Habitat

As noted in grazing, as well as the physical presence of cattle, can have negative impacts on deer and elk as it not only reduces forage availability and quality, but can causes avoidance behavior and temporal partitioning of habitat use when cattle were present.

Impacts from the potential for spatial and forage competition during the winter will remain similar to those impacts that are expected to occur under the Alternative A

Without the four year rest rotational system identified in Alternative A, the Sand Flats and Hotel Mesa Allotments would not experience positive benefits to plant species from rotational spring rest management the no action alternative would not positively impact winter forage for deer and elk. Based on history of grazing in these allotments and current rangeland health conditions, the no action alternative may allow for moderate levels of utilization to continue resulting in some benefit to desired plant species and rangeland health maintenance.

Desert Bighorn Sheep Habitat

Bighorn sheep impacts from livestock may include forage competition, habitat fragmentation, and disease would be similar to that discussed in the Desert Bighorn Sheep Habitat section of chapter 4.2.1.3.

Future occupancy of bighorn may be impacted by the presents of cattle within these habitats as there is potential for forage competition and social intolerance to occur when these allotment have active grazing occurring.

4.2.2.4 Threatened and Endangered Species and BLM State Sensitive Plant Species:

Threatened, Endangered, or Candidate Plant Species

Jones Cycladenia

This alternative would not implement a grazing system that allows for some spring rest for Sand Flats Allotment. There could be spring grazing every year within this allotment. By having no spring rest could result in reduction of vegetation, plant vigor, plant production, seed production as stated in Vegetation Section 4.2.2.5. Cattle do not seek out Jones' Cycladenia if there is good available livestock forage in the area. Cattle prefer other native vegetation over Jones's Cycladenia.

Scharf Mesa Allotment would be used during the dormant grazing season and early spring (March) each year. By resting the allotment during the critical spring months (April through May) will improve the vegetation as stated in the Vegetation Section. Cattle do not seek out Jones' Cycladenia if there is good available livestock forage in the area. Cattle prefer other native vegetation over Jones's Cycladenia.

Hotel Mesa Allotment would be used during the dormant grazing season and March through April each year. Each year this allotment would be rested throughout May. This allows for some spring rest which may prevent some reduction of vegetation, plant vigor, plant production, seed production. Cattle do not seek out Jones' Cycladenia if there is good available livestock forage in the area. Cattle prefer other native vegetation over Jones's Cycladenia.

There would be no utilization standard (moderate use) with this no action alternative. There could be some heavy use areas within these allotments. There may be some over grazing of the vegetation within the Jones' Cycladenia habitat within these allotments. There would be no impact to the highest potential habitat due to inaccessibility of cattle due to the terrain. There may be impact to accessible areas by cattle grazing with Jones' Cycladenia habitat within these allotments.

Utah BLM Sensitive Species

There is only one Utah Sensitive plant species habitat which is the Dolores rushpink that occurs within the Sand Flats, Scharf Mesa and Hotel Mesa Allotments. There are no known populations of these plants within these allotments.

The impacts to Dolores rushpink is the same as Jones' Cycladenia as stated above. Dolores rushpink are affected to varying degrees by livestock trailing and associated grazing, this plant can tolerate some level of grazing disturbance. If utilization and disturbance levels remain moderate or less, impacts can be limited to negligible effects. Over grazing has been documented as one threat to this species, however, Lyon Rondeau in 1996 indicates that the species seems to be surviving with grazing (Rondeau et al. 2011). There would be low impacts to Dolores rushpink habitat by livestock grazing within these allotments.

There would be no utilization standards for these allotments. Some areas may receive heavy use without the utilization standards which may impact the vegetation with Dolores rushpink habitat.

4.2.2.5 Vegetation

The no action alternative would have a positive impact on the vegetation within these allotments, but it would be at a slow rate than the proposed action. These allotments are meeting the Range Land Health Standards except for the 300 acres within Sand Flats Allotment would continue to make slow progress towards meeting its Standard #3.

Sand Flats Allotment

The existing permit is allowing the allotment to meet Range Land Health Standards on 98.5 percent of the allotment and 1.5 percent is not meeting Standards. There is a potential with the existing grazing permit to have a positive impact to vegetation within this allotment. Without spring rest this allotment is continuing to improve over the years at a slow rate than the proposed action. The 140 acres in the Sand Flats West Pasture that are not meeting vegetation standard may continue to be in static to slightly upward trend and objectives may continue not to be met. Even without spring rest the vegetation is showing good vigor of plants, increase in reproduction and recruitment of young plants. However, the Sand Flats East Pasture has 180 acres and Sand Flats West Pasture has 160 acres of these pastures which are functioning-at-risk due to the lack of shrubs or dying shrubs and low amount of grasses. The lack of shrubs was due to an insect infestation. These acres without spring rest continue to be static to slightly upward, but they could also start to decline in vegetation.

Alternative B does not have a requirement for moderate utilization levels. Therefore, there could be some heavy utilization occurring in low forage production years and perennial grasses and shrubs could be impacted. Intensive grazing can cause plant root damage; reduce root weight, reduce length and reduce vigor. The extent of the damage increase with the severity of the defoliation of the plants. Perennial grasses vary in sensitivity to utilization, but a majority of them sustain little damage if grazing stops in time for them to complete seed maturation (Heady and Child, 1994). Without utilization standards there may be some heavy use areas within this allotment that vegetation may not have sufficient time for recovery mainly in the pasture that is being grazed during the spring green-up.

Scharf Mesa Allotment

The existing permit is allowing the allotment to meet Range Land Health Standards. There is a potential with the existing grazing permit to have a positive impact to vegetation within this allotment. As a general rule, cool season grasses begin to grow during the latter part of March and the majority of the spring growth occurs during April and May. This allotment would be rested during the critical spring months of April and May. By not grazing in April and May will allow sufficient time for recovery during spring green-up. The impacts to this allotment would be the same as the proposed action.

Alternative B does not have a requirement for moderate utilization levels. Therefore, there could be some heavy utilization occurring in low forage production years and perennial grasses and shrubs could be impacted. Intensive grazing can cause plant root damage; reduce root weight, reduce length and reduce vigor. The extent of the damage increase with the severity of the defoliation. Perennial grasses vary in sensitivity to utilization, but a majority of them sustain

little damage if grazing stops in time for them to complete seed maturation (Heady and Child, 1994). Without utilization standards there may be some heavy use areas within this allotment, but vegetation would have April and May to recovery during the spring green-up.

Hotel Mesa Allotment

The existing permit is allowing the allotment to meet Range Land Health Standards. There is a potential with the existing grazing permit to have a positive impact to vegetation within this allotment. As a general rule, cool season grasses begin to grow during the latter part of March and the majority of the spring growth occurs during April and May. This allotment would be grazed during the critical spring month of April and rested during the critical spring month of May. By not grazing in May will allow sufficient time for recovery during spring green-up. With some spring rest this allotment would continue to improve over the years at a slow rate than the proposed action. Even with some spring rest (May) the vegetation is showing good vigor of plants, green up of plants, increase in reproduction, and recruitment of young plants.

Alternative B does not have a requirement for moderate utilization levels. Therefore, there could be some heavy utilization occurring in low forage production years and perennial grasses and shrubs could be impacted. Intensive grazing can cause plant root damage; reduce root weight, reduce length and reduce vigor. The extent of the damage increase with the severity of the defoliation. Perennial grasses vary in sensitivity to utilization, but a majority of them sustain little damage if grazing stops in time for them to complete seed maturation (Heady and Child, 1994). Without utilization standards there may be some heavy use areas within this allotment that vegetation may not have sufficient time for recovery that is being grazed during the spring green-up.

4.2.2.6 Wetlands/Riparian Zones

Sand Flats Allotment

The no action alternative for the Sand Flats Allotment differs from the proposed action in that it does not contain provisions for moving livestock when monitoring information indicates that certain vegetative parameters have been reached, and does not incorporate a grazing regime in which each pasture is rested a minimum of once every four years during April and May. This lack of emphasis on a flexible grazing regime that is sensitive to utilization data, combined with the lack of a spring rest period, limits the potential application of the no action alternative in meeting the demands of changing management needs and priorities in the wetlands and lotic riparian areas of the Sand Flats Allotment.

Scharf Mesa Allotment

The no action alternative involves dispersed livestock grazing during the dormant season and early spring. Unlike the proposed action, the no action alternative does not stipulate that livestock be moved when utilization standards are reached. Riparian vegetation can be especially sensitive to even short-term grazing impacts (Kruepper et al. 2003), which makes adaptive management of livestock grazing in riparian areas especially important. Available information indicates that current grazing practices are not degrading riparian habitats in the Scharf Mesa Allotment, but the no action alternative would likely be less responsive to any problems or challenges that may arise in the future than the proposed action.

Hotel Mesa Allotment

The no action alternative involves a grazing regime at the Hotel Mesa Allotment in which livestock are present from January 1 through April 30 of each year. It differs from the proposed action in that it does not incorporate an April rest period once every four years. This rest period is expected to benefit riparian vegetation to some degree along the Colorado and Dolores rivers, reinforcing the current upward trend in the condition of both river systems. Recent positive trends, including declines in tamarisk due to biological control, are expected to continue in the riparian habitats of the Hotel Mesa Allotment under any of the three management options, but the lack of a periodic rest period from livestock grazing could reduce the rate of increase of native riparian vegetation in the area.

4.2.2.7 Monitoring and/or Compliance

Same as Alternative A.

4.2.3 Alternative C – No Grazing

4.2.3.1 Livestock grazing

Under Alternative C there would be the greatest amount of impact to the permittees. There would be an economic impact to the permittees through lost income. The permittees may have to eliminate the livestock operation, reduce livestock numbers or have to incur the expense of feeding the livestock.

The permittees could choose to sell his livestock. The current market price in Utah for feeder cattle is \$220.35/100 lbs. (Feuz, 2014). The average weight of cattle sold at the Salina, Utah market, as of August 12, 2014 was 507 lbs. (USDA, Aug. 12, 2014). The average weight of mother cows would be expected to produce a calf each year and that calf sold to the market. Compounded over the life of the permit, would mean 286 fewer calves sold each year. Assuming the market remains the same, this would equate to an estimated lost income from the lost herds to be about \$31,951,150 over the life of the No Grazing Alternative.

Alternatively, the permittees could choose to feed those livestock outside these allotments. The current market cost (as of July 25, 2014) of good feeder hay within Utah is between \$180.00 and \$200.00 per ton (USDA, 2014). It is estimated that one cow would consume up to an estimated 20 lbs. of dry forage per day. There are a total of 1,720 AUMs that would no longer be available to cattle and would require feed. One AUM means the amount of forage necessary for the sustenance of one cow or its equivalent for a period of one month. The average number of days that would be in any given month would be 30.41666 days (20 lbs. forage/day X 30.41666 day) then the needs for one cow for one month (one AUM) would be 608 lbs. of forage. The forage needs for 1,720 AUMs would be (1,720 AUMs X 608 lbs. forage/AUM) 1,045,760 lbs. or 522.88 tons of forage. Having to feed 1,045,760 lbs. or 522.88 tons of forage would cost the permittees between \$941,184 and \$1,045,760 per year to substitute for the 1,720 AUMs lost. Having to feed the livestock for the 10 year term of the permit is estimated to potentially cost the permittees between \$9,411,840 between \$10,457,600.

4.2.3.2 Soils

The recent Rangeland Health Assessment and determinations for these allotments showed the majority of the upland soils are meeting Standard #1. There are three small areas that are not meeting upland soil Standard #1. Impacts to soil resources within these allotments without livestock grazing would continue to meet Rangeland Health. The several small areas within the Sand Flats Allotment that is not meeting soil Standard #1 and may slowly improve over the years.

4.2.3.3 Threatened and Endangered or State Sensitive Animal Species, Migratory Birds and Wildlife

Threatened, Endangered, or Candidate Animal Species

Mexican Spotted Owl (MSO)

The majority of the MSO nesting habitats in these allotments are found below the rims along the steep canyon walls above the river. These areas are not accessible to cattle and therefore the remove of grazing activities would have similar impacts as other alternatives to nesting owls and nesting habitats.

With no livestock grazing activity within MSO foraging habitat within these allotments vegetation would be expected to increase. The biggest impact to vegetation under this alternative would be to palatable shrubs as they would no longer be grazed by livestock and would be able to grow uninhibited as they would receive no livestock browsing on them though deer and elk would continue to browse the shrubs during the winter months.

Vegetation in MSO foraging habitats that support nesting habitats in the canyons below would maintain and increases in vigor and productivity, thereby facilitating forage production, seed production, production of good plant vigor, aid in seed dispersal and establishment of young plant species that would also facilitate and improve MSO prey base habitats. This would have overall positive effects to the suitable MSO foraging habitats in the area. If MSO nesting occurred near these allotments there would be no direct conflicts between cattle presents and foraging owls.

Southwestern Willow flycatcher (SWFL)

Nesting SWFL are not expected to occur in the area therefore impacts to nesting SWFL would have similar impacts as other alternatives to nesting owls and nesting habitats.

Suitable habitats along the Colorado and the Dolores Rivers and in the lower fork of Coates Creek would not be impacted by cattle use. The majority of riparian areas with federal lands within these allotments are in Properly Functioning Condition under current grazing management. With the lack of grazing an upward trend in understory vegetation would be expected and cottonwood and willow recruitment may also increase therefore adequate vegetative cover and structure within all suitable SWFL habitats.

Yellow-billed Cuckoo (YBC)

Within potential and designated critical habitats for the YBCU along the Colorado and Dolores rivers grazing currently does not and would not occur during the nesting and migrational season for YBCU, June 1 through August 15, therefore direct impacts to YBCU would be similar as all other alternatives

Impacts to YBCU habitats would be similar as discussed in the SWFL section above.

Bonytail Chub

As noted previously, riparian habitats along the reaches of the Colorado and Dolores rivers inhabited by bonytail chub and bordering one or more of the three grazing allotments are rated at proper functioning condition and trending upward. Under the no grazing alternative, this trend would likely continue. However, restoration of more natural flow regimes, in combination with reductions in densities of nonnative fishes, would likely be required before natural reproduction and juvenile recruitment of bonytail chub could occur again in this region.

Humpback Chub

Riparian habitats along the portion of the Colorado River inhabited by humpback chub and bordering the Sand Flats and Hotel Mesa Allotments are currently rated at proper functioning condition and trending upward. This trend would probably continue for several years under the no grazing alternative, which would complement efforts to protect and enhance the integrity of habitats supporting the viable population of humpback chub in the vicinity of Westwater Canyon.

Colorado Pikeminnow

Riparian habitats along the portion of the Colorado River inhabited by Colorado pikeminnow and bordering the Sand Flats and Hotel Mesa Allotments are currently rated at proper functioning condition and trending upward. Under the no grazing alternative, this trend would likely continue. Colorado pikeminnow use this portion of the Colorado River primarily as a migration corridor, and are not known to reproduce in the area. Consequently, it is unclear what implications the improving riparian conditions have for Colorado pikeminnow at the population level.

Razorback Sucker

Riparian habitats along the reaches of the Colorado and Dolores rivers inhabited by razorback suckers and bordering one or more of the three grazing allotments are rated at PFC and trending upward. Under the no grazing alternate, this trend would likely continue. Temporarily inundated floodplain habitats are important in juvenile recruitment of razorback suckers. These habitats are currently limited due to altered flow regimes, but a transition to a more diverse riparian plant community dominated by native vegetation can partially compensate for this limitation (Laub et al. 2015). Such a transition will likely result from ongoing habitat restoration efforts under either the proposed action or the no grazing alternative.

Utah BLM Sensitive Species

Bald Eagle

Livestock grazing in riparian areas may lead to adverse environmental effects that cumulatively may lead to deterioration of active bald eagle nesting and communal winter roosting habitats. The no grazing alternative would reduce the removal of vegetative cover and spatial competition that occurs from livestock grazing. The majority of riparian areas associated with federal lands within these allotments are in Properly Functioning Condition under current grazing management. With the lack of grazing a greater upward trend in understory vegetation would be expected and cottonwood and willow recruitment may also increase leading to improved active bald eagle nesting habitats

Sensitive Fish Species

Ongoing and recently planned habitat restoration projects aimed at reducing densities of tamarisk, Russian olives, and other invasive riparian plants are expected to change floodplain conditions and restore native riparian vegetation in a manner that promotes more dynamic fluvial process, improves nutrient cycling, and favors the formation of more complex river channel habitats (Mineau et al. 2012; Keller et al. 2014). This is a major emphasis in the current management strategy in Utah for improving habitats of roundtail chub, bluehead suckers, and flannelmouth suckers (Laub et al. 2015). The no grazing alternative could contribute to this effort by eliminating browsing by livestock on willows and young cottonwoods and by eliminating a vector in the spread of seeds of invasive plants. However, it is conceivable that livestock grazing could be used as a tool to reduce the biomass of invasive plants in certain riparian areas that are dominated by dense stands and monocultures of invasive vegetation. This option would not exist under the no grazing alternative.

Migratory Birds and Raptors

Alternative C would reduce the removal of vegetative cover and spatial competition that occurs from livestock and would be expected to improve the ecological condition of the range. It would directly affect the quality and quantity of the vegetative communities that support migratory birds.

Alternative C would remove livestock grazing and would ensure the physiological requirements of plants would be met and would provide adequate vegetative food and cover needs for an abundant and diverse insect base and provide adequate nesting structure to support migratory bird nesting. The no grazing alternative would ensure these riparian areas remain in PFC.

Alternative C would reduce all potential for spatial competition between livestock and nesting migratory birds.

Alternative C would be expected to improve migratory bird habitats more than the other grazing alternatives.

General Wildlife and Big Game Species

Alternative C would reduce the removal of vegetative cover and forage that occurs from livestock grazing and the spatial competition that can occur between wildlife, such as mule deer, elk and desert bighorn sheep, and livestock.

Animals such as small mammals, reptiles, songbirds and insects that rely on the cover and forage provided by the vegetative community they inhabit would benefit from this reduced spatial and forage competition. The ecological condition of the range directly affects the quality and quantity of the vegetative communities that support the wildlife in these allotments.

Alternative C would continue to support good range conditions because there would be no livestock grazing. This would maintain or encourage health and productivity in range condition. As range conditions improve, the density and diversity of these vegetative communities would also be expected to improve. Increase plant density offers improved thermal protective cover for both prey and predator species and a greater forage base for prey species. Improved plant diversity increases forage opportunities and develops greater opportunities for diversification in ecological niches thus allowing for enhance species diversity. The no grazing alternative would be expected to improve wildlife and range conditions more than all of the other grazing alternatives.

4.2.3.4 Threatened and Endangered Species and BLM State Sensitive Plant Species:

Threatened, Endangered, or Candidate Plant Species

Jones Cycladenia is the only threatened plant species which has habitat within the Sand Flats, Scharf Mesa and Hotel Mesa Allotments. With no livestock grazing there would be no impacts to this plant species habitat by livestock.

Utah BLM Sensitive Species

There is one Utah Sensitive plant species habitat which is Dolores rushpink may to inhabitant the Sand Flats, Scharf Mesa and Hotel Mesa Allotments. With no livestock grazing there would be no impacts to this sensitive plant species by livestock.

4.2.3.5 Vegetation

Sand Flats Allotment

Impacts to this allotment with no livestock grazing, the vegetation would be expected to increase across the allotment as a whole. The key areas would be expected to be in an upward trend with the understory vegetation increasing. The exception Key Area #14 (180 acres) in East Sand Flats Pasture and 140 acres in West Sand Flats Pasture where the shrubs within these two sites has greatly been reduced by an insect infestation in the 1980's with few shrub present at this time. The grass component of these plant communities would start to improve and the shrub component would stay the same due to the lack of shrubs over the ten year period. There is 140 acres within Sand Flats West Pasture which had a major reduction of perennial plants and increasing in cheatgrass. This plant community would start to improve over the ten year period.

The biggest impact to vegetation under this alternative would be expected in the palatable shrubs. They would no longer be grazed by livestock and would be able to grow uninhibited as their growth points would receive no livestock browsing on them. Wildlife would continue to use the allotment and browse the shrubs. The trend sites would be expected to show an increase

in shrubs like four winged saltbush, shadscale and winterfat. The lack of spring grazing by livestock would also increase the palatable grasses within this allotment.

Scharf Mesa Allotment

Impacts to this allotment with no livestock grazing, the vegetation would be expected to increase across the allotment as a whole. The key areas would be expected to be in an upward trend with the understory vegetation increasing.

The biggest impact to vegetation under this alternative would be expected in the palatable shrubs. They would no longer be grazed by livestock and would be able to grow uninhibited as their growth points would receive no livestock browsing on them. Wildlife would continue to use the allotment and browse the shrubs. The trend sites would be expected to show an increase in shrubs like four winged saltbush, shadscale and winterfat. However, certain areas of the sagebrush communities would continue to be used moderate to heavy by deer and a few elk during the winter season. The lack of spring grazing by livestock would also increase the palatable grasses within this allotment.

Hotel Mesa Allotment

Impacts to this allotment with no livestock grazing, the vegetation would be expected to increase across the allotment as a whole. The key areas would be expected to be in an upward trend with the understory vegetation increasing.

The biggest impact to vegetation under this alternative would be expected in the palatable shrubs. They would no longer be grazed by livestock and would be able to grow uninhibited as their growth points would receive no livestock browsing on them. The trend sites would be expected to show an increase in shrubs like four-winged saltbush, shadscale and winterfat. The lack of spring grazing by livestock would also increase the palatable grasses within this allotment.

4.2.3.6 Wetlands/Riparian Zones

Sand Flats Allotment

The no grazing alternative for the Sand Flats Allotment would likely result in significant increases in herbaceous cover and increases in the recruitment of willows and cottonwoods in lotic riparian areas in the Sand Flats Allotment. It would also be expected to increase the cover and diversity of native vegetation at seeps and springs. Changes due to a cessation of livestock grazing would probably be most pronounced along the Colorado and Dolores rivers, where restoration efforts are underway to reduce the distribution and abundance of invasive plants. These efforts are expected to create space for the reestablishment of native vegetation.

Scharf Mesa Allotment

Livestock grazing is currently restricted to the dormant season and early spring at the Scharf Mesa Allotment, which minimizes its impacts. Consequently, the three management options for livestock grazing along the Dolores River and Buckhorn Spring may not produce markedly different results with respect to trends in the composition and characteristics of riparian vegetation. However, as discussed above, restoration efforts would likely facilitate efforts to

reestablish native riparian vegetation in areas subject to treatments aimed at reducing densities of tamarisk and other invasive plant species along the Dolores River.

Hotel Mesa Allotment

Recent positive trends in riparian zones along Colorado and Dolores rivers in the Hotel Mesa Allotment are likely to continue in the near future under any of the three management options. Generally, improvements are likely to be most rapid under the no grazing alternative. However, in areas that have been extensively degraded by the spread of cheatgrass, seasonal livestock grazing could be used as an effective management tool in reducing cheatgrass biomass and fire danger. Elimination of this option under the no grazing alternative could restrict effective management of cheatgrass-dominated riparian areas.

4.2.3.7 Monitoring and/or Compliance

Qualitative monitoring and compliance would occur throughout the grazing season during the two year notification period. Following the two year notification, compliance monitoring would not be needed as no permit would be issued. An exception may be the need to conduct compliance checks to verify that grazing has ceased after the two year notification.

Quantitative monitoring efforts would be the same as the proposed action. Monitoring is established to assure that the overall ecological health of these allotments is being managed for as well as to detect trend/change in vegetative composition.

4.3 Cumulative Impacts Analysis

Federal Regulations at 40 CFR 1508.7, define a cumulative impact as: "...the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." The following sections describe past, present and reasonably foreseeable actions in the vicinity of the proposed project.

4.3.1 Livestock Grazing, Soils, Vegetation and Wetlands/Riparian Zones

The cumulative impact area (CIA) of analysis for soils, riparian zones, livestock grazing and vegetation resources in the Sand Flats, Scharf Mesa and Hotel Mesa Allotments boundaries. The CIA are where livestock grazing would be authorized under the grazing permit, topographic features and fencing limit the influence that livestock would have beyond the CIA on vegetation, and the soil units. The timeframe for analysis of cumulative impacts is 10 years because that is the length of time that the grazing permit would authorize grazing. After 10 years, the area would be evaluated again to determine if it is appropriate to renew the permit and what management changes may be necessary.

Past, present and reasonably foreseeable actions ongoing in the cumulative impact area for soils riparian zones, livestock grazing and vegetation resources include the activities and actions of

livestock grazing, and range improvements, mineral exploration and development, road development and use, wildlife use and habitat improvements and recreation use.

Livestock grazing has taken place in the CIA for more than the last 100 years. Both cattle and sheep have been grazed in the CIA. Range improvements in the CIA include one spring development, 12 cattle guards, 27 reservoirs (about 0.25 acres each) and approximately 18 miles of fence.

The cumulative impacts to soils, riparian zones, livestock grazing, and vegetation resources from the past, present, and reasonably foreseeable actions include: With the change in grazing management there may be changes in vegetation, there may be an increase in forage for livestock and wildlife. However, with increase in roads, mining activity and recreation there would be loss of soils from the construction and use of range improvements, roads, mining activity and recreation.

Mining activity, road construction and use, the construction use of range improvements and historic livestock grazing have resulted in a loss of vegetation and soil stability in certain areas of these allotments. These activities have also led to the introduction of cheatgrass, Russian thistle and Russian knapweed which are non-native invasive plant species. Improvements including water developments, vegetative treatments, and pasture fences can improve use of the vegetation, improve forage quality and quantity, and protect the soils from erosion.

Alternative A would allow for spring rest of vegetation for Sand Flats, Scharf Mesa and Hotel Mesa Allotments, which would increase the vigor, density, diversity, quality, and quantity of forage, and protection of soils from water and wind erosion. Alternative A would have the utilization standard which would keep the vegetation from being over grazed.

With Alternative B Sand Flats Allotment could have no spring rest, Scharf Mesa Allotment would be rested in April and May each year and Hotel Mesa Allotment would be rested in late spring (May) each year. Alternative B would have no utilization standards which may cause some areas of these allotments to be over grazed which would decrease the vigor, density, diversity, quality, and quantity of forage and protection of soils from water and wind erosion.

Alternative C would allow for ten year of rest from livestock grazing within these allotments, which would increase the vigor, density, diversity, quality, and quantity of forage, and protection of soils from water and wind erosion.

The cumulative effect with alternatives A, B and C would be to continue to meet all the Standards (Standard #1 (upland Soils), Standard #2 (Riparian) and Standard #3 (Desired Species). However the 480 acres that are functioning-at-risk in Sand Flats Allotment would continue to remain in static trend and may develop a downward trend in the future with alternative B. With alternative A and C these 480 acres may start to improve. In the future this area may have to be reseeded if there is no improvement.

4.3.2 Threatened Endangered or State Sensitive Animal Species, Migratory Birds and Wildlife

The wildlife CIA overlaps with livestock use in this area and is affected by grazing, transportation use, wildlife use, and habitat improvements, recreation use, hunting opportunities, and mining exploration and development. The CIA also includes the habitat for many avian species. The timeframe for the analysis of cumulative impacts is 10 years because that is the length that the permit would be issued.

Past, present and reasonably foreseeable actions ongoing in the CIA for wildlife resource include the activities and actions of mineral exploration and development, road development and use, livestock grazing, and range improvements, wildlife use and habitat improvements and recreation use.

The cumulative effects to wildlife resources from the past, present, and reasonably foreseeable actions include: vegetative alternation, habitat fragmentation, increased human disturbances and the anthropogenic effects on the landscape that alters and impacts the quality, quantity and use of habitat associated with local wildlife species that utilize the Wildlife CIA for breeding, nesting, foraging, year-round use and migration.

Typical mineral and road development, recreational activities and road use have the greatest impacts to wildlife habitats as these activities fragment the landscape, remove and alter the vegetative community and increase human conflicts and disturbances to wildlife populations. Livestock use alters the vegetative community, decreases large ungulate movements and increases spatial and foraging competition between domestic animals and wildlife thus reducing available habitats. Habitat improvements including water developments, vegetative treatments and improving wildlife passage through allotments and pasture fences can improve and increase quality, quantity and use of habitat for wildlife.

Alternative A would allow for rotational spring rest within the Sand Flats, Scharf Mesa and Hotel Mesa Allotments that would help promote annual early spring forb and grass growth, recruitment, vegetative density, diversity, and reduce spatial competition from cattle during the wildlife birthing and nesting season of mammalian and avian species in some or all areas.

Alternative B would allow for no spring rest the Sand Flats Allotment that would not help promote annual early spring forb and grass growth, recruitment, vegetative density, diversity, and reduce spatial competition from cattle during the birthing and nesting season of avian species in some or all areas. Alternative B would also allow for the critical spring months (April and May) to be rested each year within the Scharf Mesa Allotment and Hotel Mesa Allotment would be rested each year in May. This would help promote annual spring forb and grass growth, recruitment, vegetative density, diversity, and reduce spatial competition from cattle during the birthing and nesting season of avian species in some or all areas.

Alternative C would allow for 10 year of rest from livestock grazing which would help promote annual early spring forb and grass growth, recruitment, vegetative density, diversity, and reduce spatial competition from cattle during the birthing and nesting season of avian species in some or all areas.

4.3.3 Threatened Endangered or BLM State Sensitive Plants Species

The cumulative impact area (CIA) of analysis for Threatened, Endangered or BLM State Sensitive Plant Species resources in the Sand Flats, Scharf Mesa and Hotel Mesa Allotments boundaries. The CIA are where livestock grazing would be authorized under the grazing permit, topographic features and fencing limit the influence that livestock would have beyond the CIA on Threatened, Endangered or BLM State Sensitive Plant Species within the grazing allotments. The timeframe for analysis of cumulative impacts is 10 years because that is the length of time that the grazing permit would authorize grazing. After 10 years, the area would be evaluated again to determine if it is appropriate to renew the permit and what management changes may be necessary.

Past, present and reasonably foreseeable actions ongoing in the cumulative impact area for Threatened, Endangered or BLM State Sensitive Plant Species include the activities and actions of livestock grazing, and range improvements, mineral exploration and development, road development and use and recreation use.

Ongoing and potential anthropogenic impacts to habitat include; Off-highway vehicle (OHV) use; oil, gas, and mineral exploration, including uranium mining and livestock grazing (although the rule, 51 FR 16526, May 5, 1986, notes the probability of grazing causing serious damage to Jones' *Cycladenia* plants was low). Recreation use (OHV) use and mining activities has the highest impacts to these plants and their habitat within the CIA.

Alternative A would allow for rotational spring rest within the Sand Flats and Hotel Mesa Allotments that would help promote annual early spring forb and grass growth, recruitment, vegetative density, and diversity within Jones' *Cycladenia* and Dolores rushpink habitats.

Alternative B would allow for no spring rest the Sand Flats Allotment that would not help promote annual early spring forb and grass growth, recruitment, vegetative density, diversity within Jones' *Cycladenia* and Dolores rushpink habitats.

Alternative B would allow for the critical spring months (April and May) to be rested each year within the Scharf Mesa Allotment. This would help promote annual spring forb and grass growth, recruitment, vegetative density, and diversity within the Jones' *Cycladenia* and Dolores rushpink habitats.

Alternative B would allow for the critical spring month (May) to be rested each year within the Hotel Mesa Allotment. This would help promote late annual spring forb and grass growth, recruitment, vegetative density, and diversity within the Jones' *Cycladenia* and Dolores rushpink habitats.

Alternative C would allow for 10 year of rest from livestock grazing which would help promote annual early spring forb and grass growth, recruitment, vegetative density, and diversity within the Jones' *Cycladenia* and Dolores rushpink habitats.

5.0 CONSULTATION AND COORDINATION

5.1 Introduction

The issue identification section of Chapter 1 identifies those issues analyzed in detail in Chapter 4. The Interdisciplinary Team Checklist provides the rationale for issues that were considered but not analyzed further. The issues were identified through the public and agency involvement process described in sections 5.2 and 5.3 below.

5.2 Persons, Groups, and Agencies Consulted:

Table 27: List of all persons, agencies and organizations consulted for purposes of this EA.

Name	Purpose & Authorities for Consultation or Coordination	Findings & conclusion
Grazing authorization number 4300428-Current Permittees	Consulting with permittees for alternatives and grazing system.	Telephone conversation about grazing systems/proposed action and other alternatives.
Utah Division of Wildlife Resources-Price Office	Consult with UDWR as the agency with expertise on impacts on game species.	Data and analysis regarding big game species incorporated into Chapter 3 and 4.
U.S. Fish & Wildlife Service	Information on Consultation, under Section 7 of the Endangered species Act (16 USC 1531)	At the present time BLM is consulting with UDWR.
Utah State Historic Preservation Office (SHPO)	Consultation for undertakings, as required by the National Historic Preservation Act (NHPA) (54 USC 306108)	SHPO concurred with BLM's determination of no adverse effect by a letter dated April 28, 2016
State Institutional Trust Lands	Consulted with Statelands about the new AMP and grazing on Utah Statelands	Telephone conversation about grazing systems/proposed action and other alternatives.
South Ute Indian Tribe	Consultation as required by the American Indian Religious Freedom Act of 1978 (42 USC 1531) and NHPA (16 USC 1531)	Native American Tribes consulted with letters dated April 21, 2016. There was no response.
Ute Mountain Ute Tribe	Consultation as required by the American Indian Religious Freedom Act of 1978 (42 USC 1531) and NHPA (16 USC 1531)	Native American Tribes consulted with letters dated April 21, 2016. There was no response.
Northern Ute Tribe	Consultation as required by the American Indian Religious Freedom Act of 1978 (42 USC 1531) and NHPA (16 USC 1531)	Native American Tribes consulted with letters dated April 21, 2016. There was no response.
Jemez Tribe	Consultation as required by the	Native American Tribes consulted

Name	Purpose & Authorities for Consultation or Coordination	Findings & conclusion
	American Indian Religious Freedom Act of 1978 (42 USC 1531) and NHPA (16 USC 1531)	with letters dated April 21, 2016. There was no response.
Hopi Tribal Council	Consultation as required by the American Indian Religious Freedom Act of 1978 (42 USC 1531) and NHPA (16 USC 1531)	Native American Tribes consulted with letters dated April 21, 2016. Hopi Tribal Council responded on April 29, 2016 for them to determine if a finding of “no adverse effect” is appropriate. They are requesting a copy of the cultural resources report, including documentation of the rock art, for review and comment.
Navajo Nation	Consultation as required by the American Indian Religious Freedom Act of 1978 (42 USC 1531) and NHPA (16 USC 1531)	Native American Tribes consulted with letters dated April 21, 2016. There was no response.
Pueblo of Zuni	Consultation as required by the American Indian Religious Freedom Act of 1978 (42 USC 1531) and NHPA (16 USC 1531)	Native American Tribes consulted with letters dated April 21, 2016. There was no response.

Tribal Consultations

The MFO initiated consultation with seven tribal entities by mailing allotment descriptions, a summary of the Class I research, allotment maps and request for comments on April 21, 2016. There were no comments received by the tribal groups except for the Hopi Tribal Council requested copy of the Cultural resources report, including documentation of the rock art, for review and comment.

5.3 Summary of Public Participation

The notice of the preparation of an EA was posted on the Utah BLM Eplanning website on December 8, 2015. The current grazing permittees was notified by mail on March 13, 2014 and by phone on September 17, 2015 of the BLM’s intent to evaluate grazing on the Sand Flats, Scharf Mesa and Hotel Mesa Allotments through a NEPA analysis. Initial scoping closed on February 15 2016. Scoping comments were received from three parties.

An update to the Eplanning website was made including the EA for a 30 day public comment period on June 1, 2016 and copies were mailed out to interested public.

Interested Public:

William E. Love was sent a copy of the EA for comments on June 1, 2016.

Lionel Trepanier was sent a copy of the EA for comments on June 1, 2016.

Western Watersheds Project was sent a copy of the EA for comments on June 1, 2016.

Utah State Trust Lands were sent a copy of the EA for comments on June 1, 2016.

Southeast Utah Grazing Improvement Program was sent a copy of the EA for comments on June 1, 2016.

Grand County Council Chair was sent a copy of the EA for comments on June 1, 2016.

Marc Thomas was sent a copy of the EA for comments on June 1, 2016.

The State of Utah, Office of the Governor was sent a copy of the EA for comments on June 1, 2016.

5.4 List of Preparers

Table 28: BLM Staff, who participated in preparing EA.

Specialist	Title	Responsible for the Following Section(s) of this Document
David Williams	Range Management Specialist	Utah's Standards for Rangeland Health, Livestock Grazing, Soils, Vegetation, T & E Plant Species and Team Leader.
Kim Allison	Range Management Specialist	Maps
Jordan Davis	Range Management Specialist	Invasive, Non-native species, Woodland/Forestry
Ann Marie Aubry	Hydrologist	Water Quality/Greenhouse Gas Emissions, Air Quality, Watershed and Floodplains
Michael Lundell	Archaeologist	Cultural Resources and Native American Concerns
Pamela Riddle	Wildlife Biologist	T & E Wildlife species, Migratory Birds, Utah BLM Sensitive Species, and Fish and Wildlife
Mark Glover	Fishery Biologist	Wetland/Riparian Zones and Fisheries
Bill Stevens	Recreation Planner	Wilderness, Wilderness Characteristics, and Socio-economics.
Katie Stevens	Recreation	Areas of Critical Environmental Concerns, Recreation Wild and Scenic Rivers, Visual Resources, Environmental Justice, Hazardous/Solid Wastes, and NEPA Review.
David Pals	Geologist	Geology and Mineral Resources
Rebecca Hunt-Foster	Paleontologist	Paleontology
Jan Denney	Realty Specialist	Lands/Access
Josh Relph	Fuels Specialist	Fire and Fuels Management

6.0 REFERENCES, GLOSSARY

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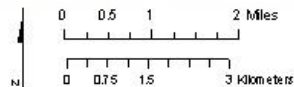
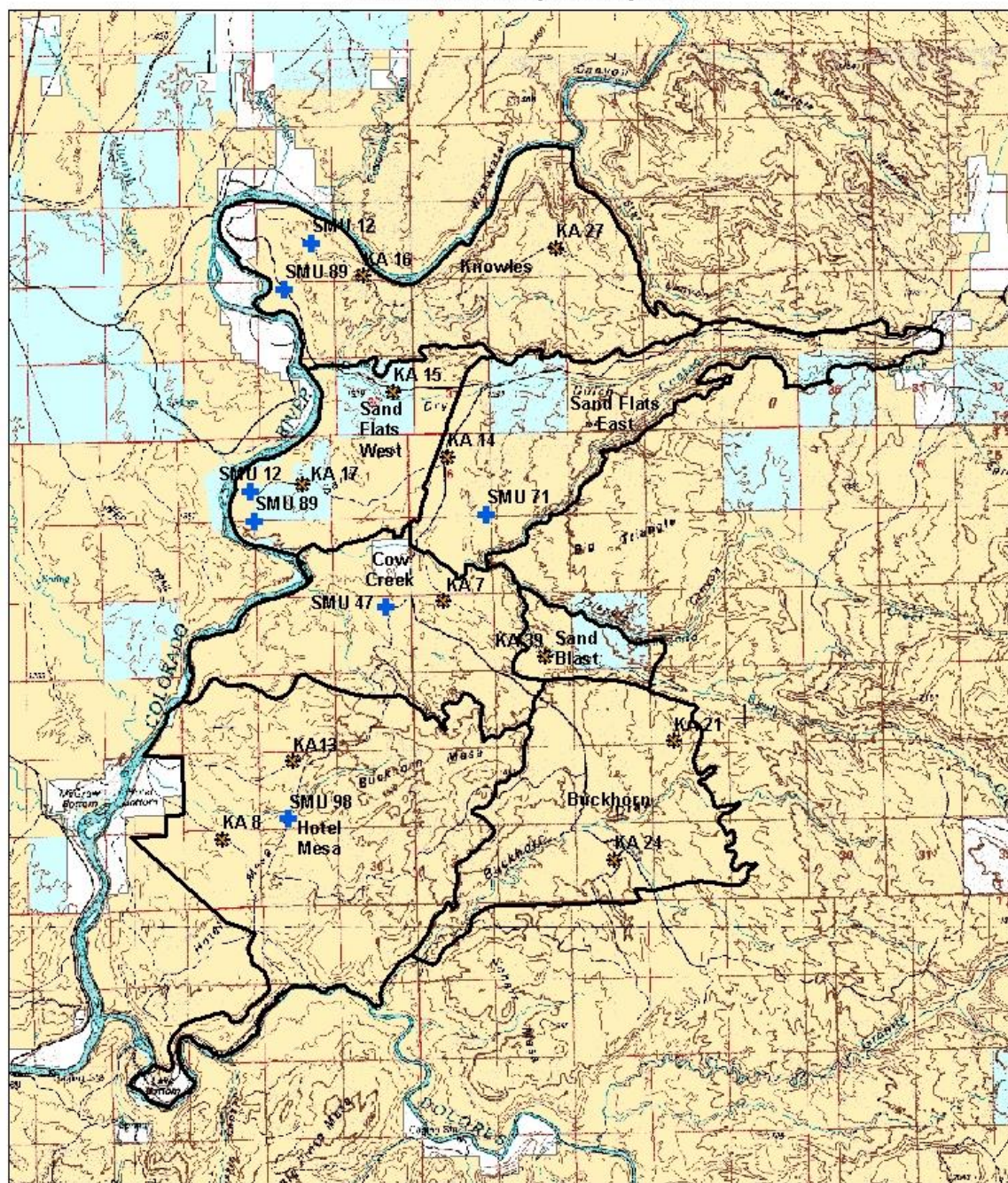
Utah's Standards for Rangeland Health
MFO Resource Management Plan October 2008
The livestock permittees individual allotment grazing case file
Sand Flats, Scharf Mesa and Hotel Mesa Allotments monitoring files
NRCS Ecological Site Descriptions
Dolores Triangle Habitat Management Plan (HMP) 1979

APPENDIX A MAPS

- Map #1: Sand Flats Allotment (Assessment Locations)**
- Map #2: Scharf Mesa Allotment (Assessment Locations)**
- Map #3: Hotel Mesa Allotment (Assessment Locations)**
- Map # 4: Sand Flats Soils**
- Map #5: Scharf Mesa Allotment Soils**
- Map #6: Hotel Mesa Allotment Soils**
- Map #7: Sand Flats Allotment Vegetation**
- Map #8: Scharf Mesa Allotment Vegetation**
- Map #9: Hotel Mesa Allotment Vegetation**
- Map #10: Sand Flats, Scharf Mesa and Hotel Mesa Allotments Proposed Action Pastures**

Map 1: Sand Flats Allotment
 Moab Field Office, Canyon Country District

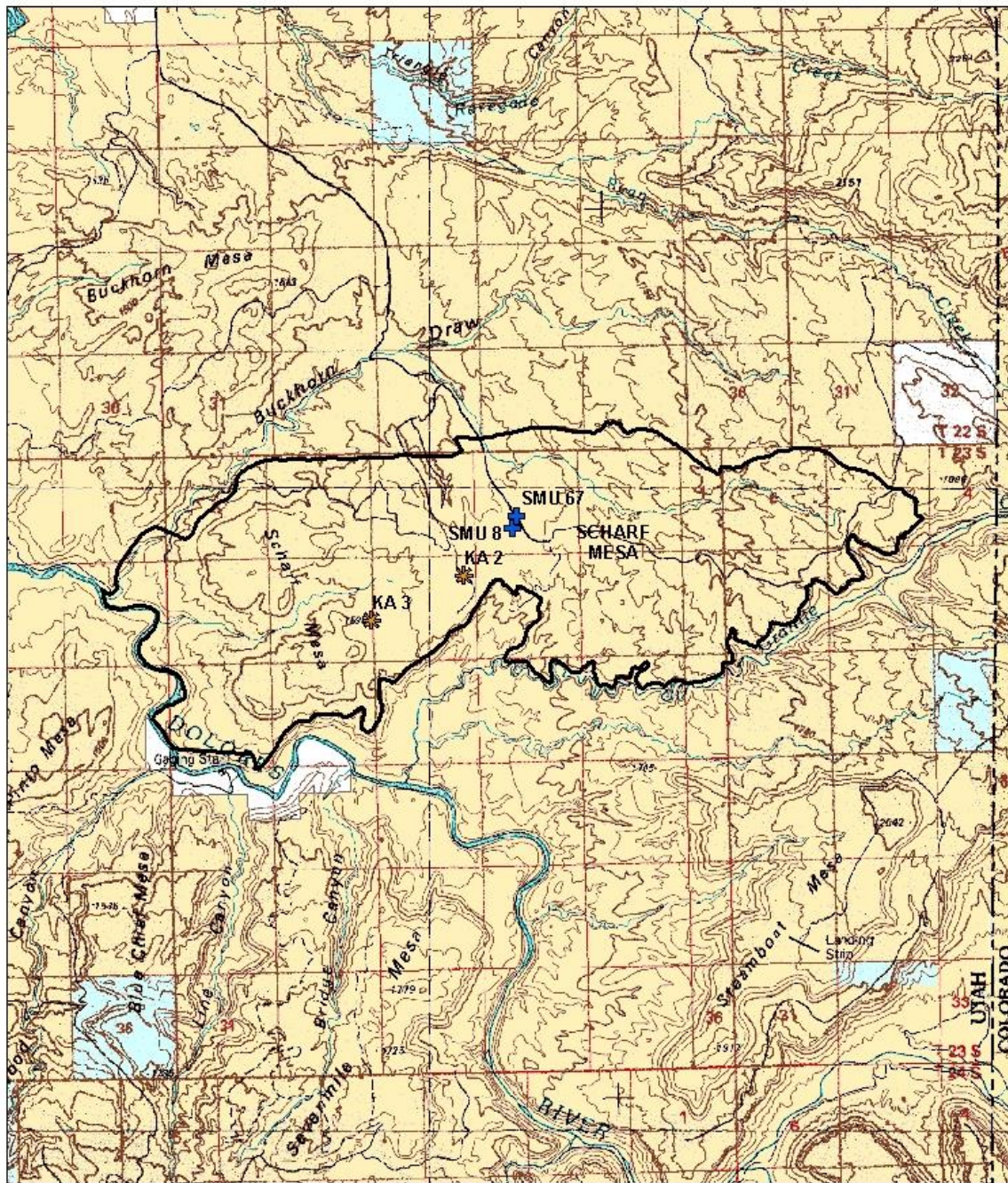
March 22, 2016



No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data.

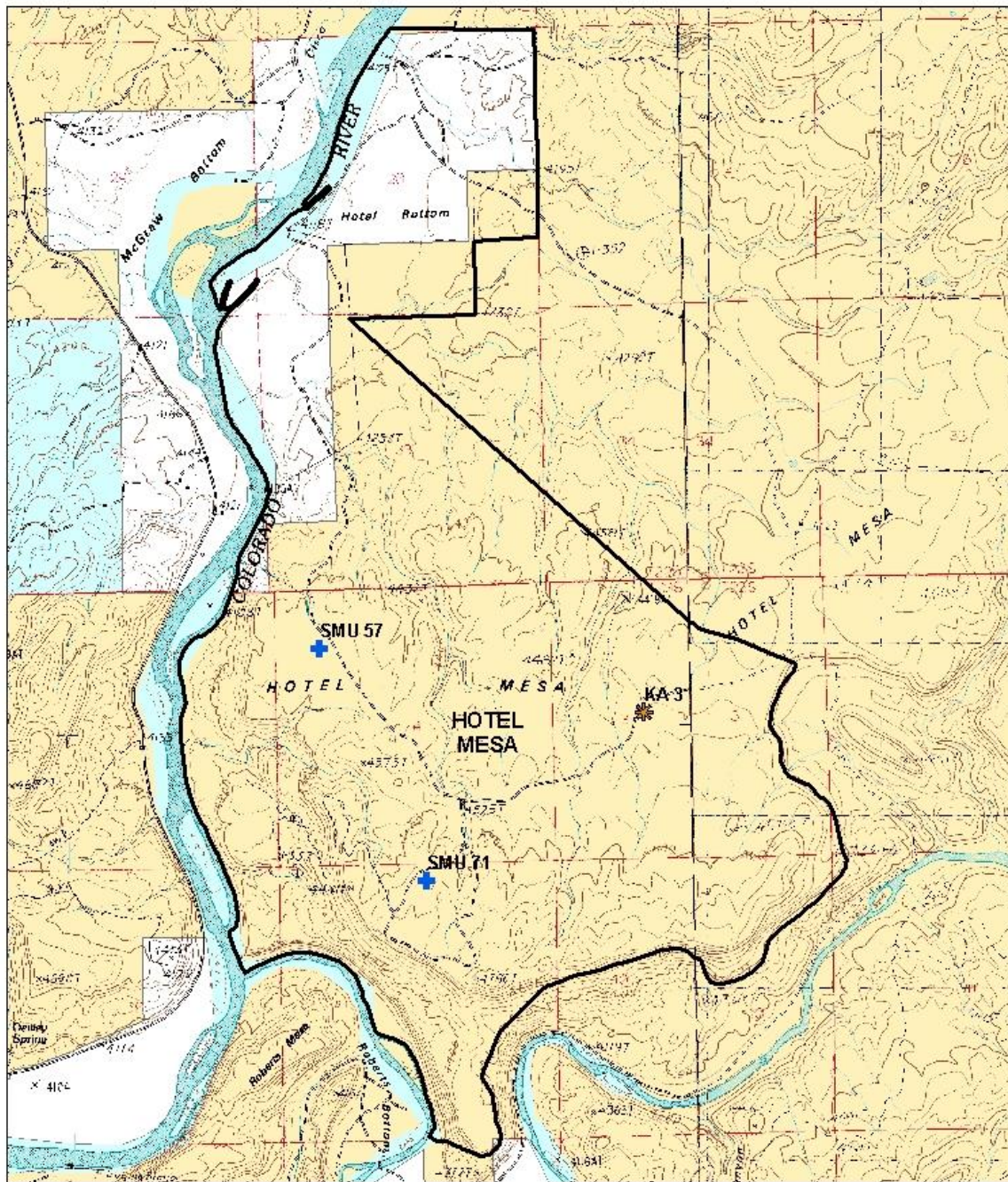
Map 2: Scharf Mesa Allotment
Moab Field Office, Canyon Country District

March 22, 2016



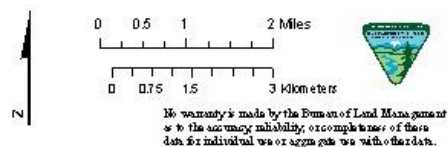
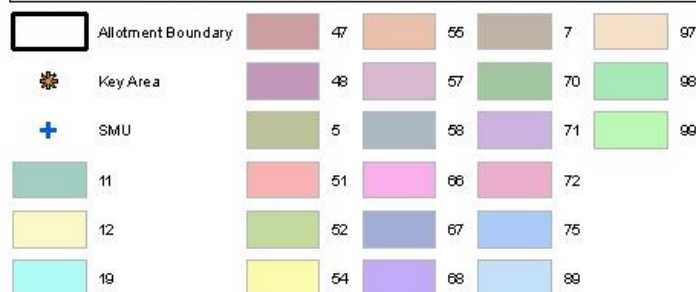
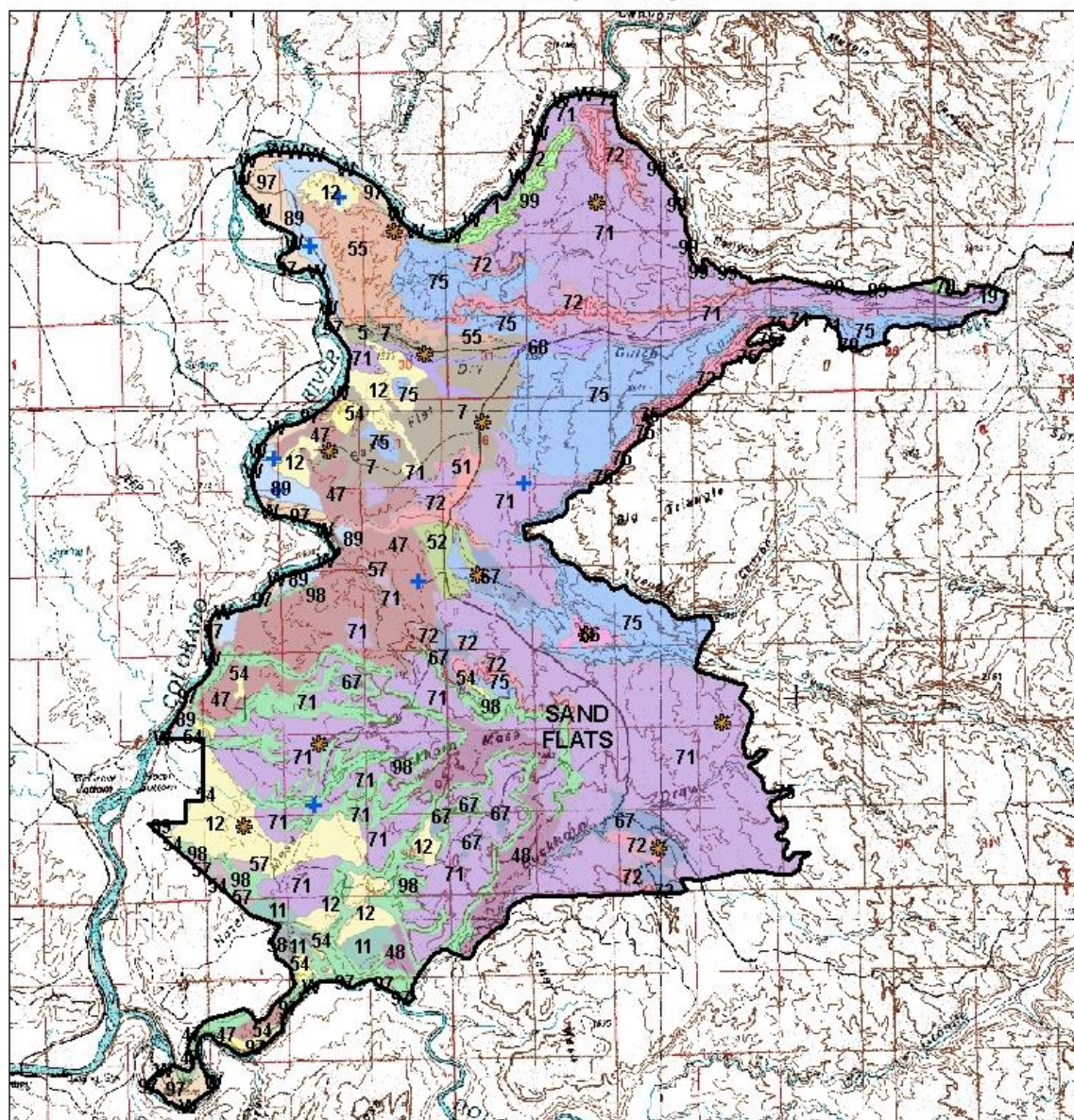
Map 3: Hotel Mesa Allotment
 Moab Field Office, Canyon Country District

March 22, 2016



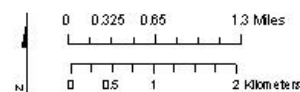
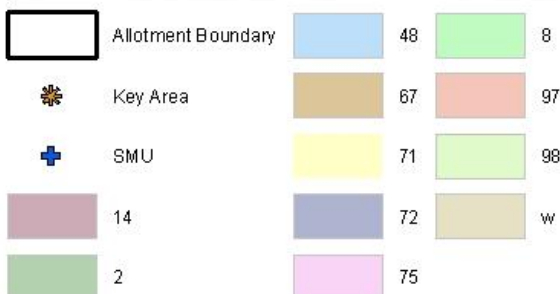
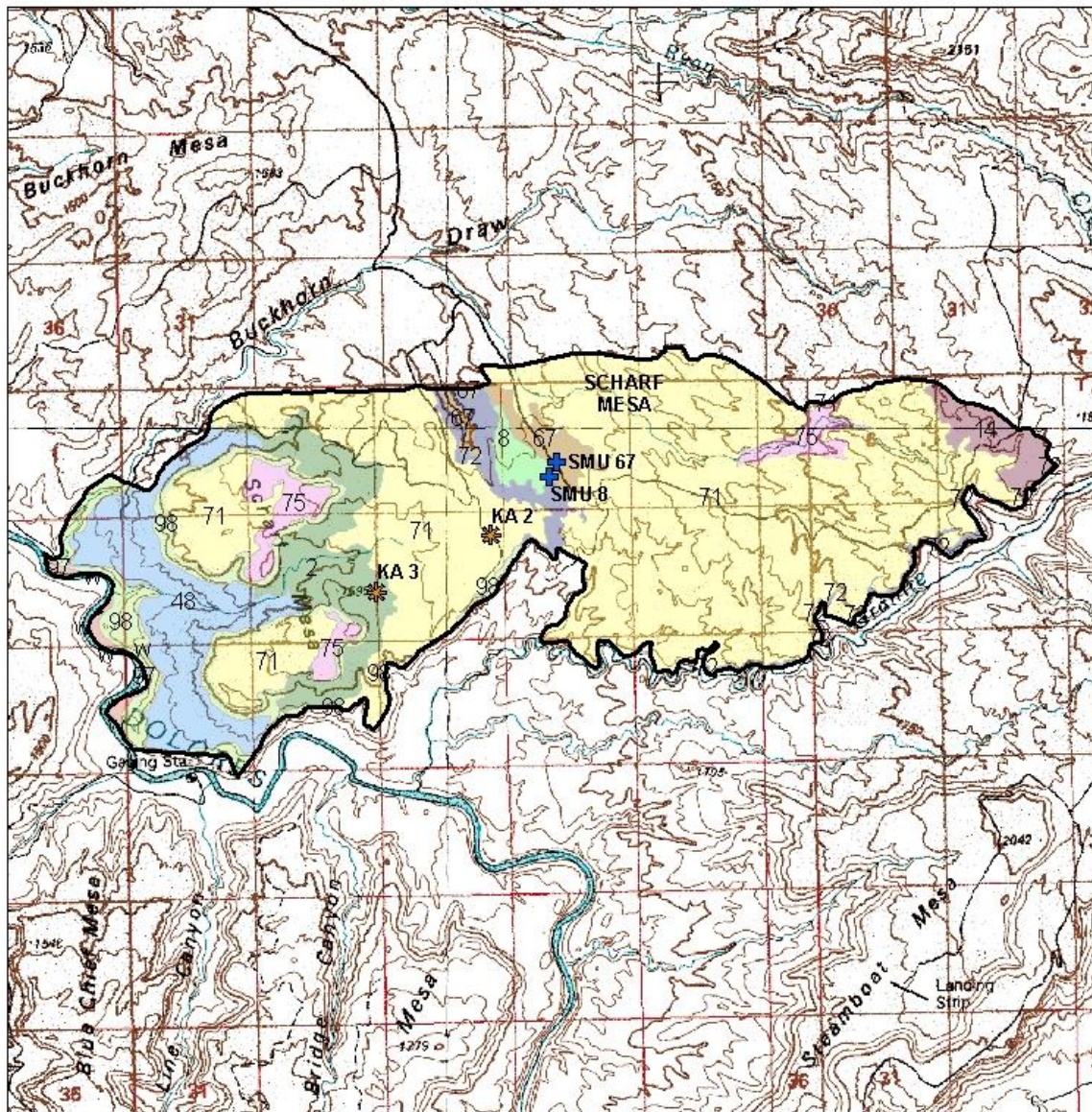
Map 4: Sand Flats Allotment Soils
 Moab Field Office, Canyon Country District

March 22, 2016



Map 5: Scharf Mesa Allotment Soils
 Moab Field Office, Canyon Country District

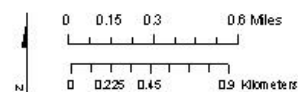
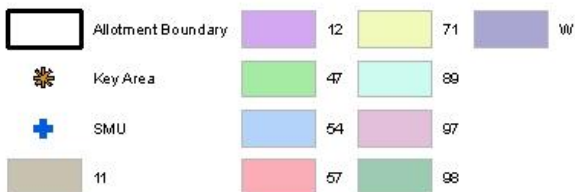
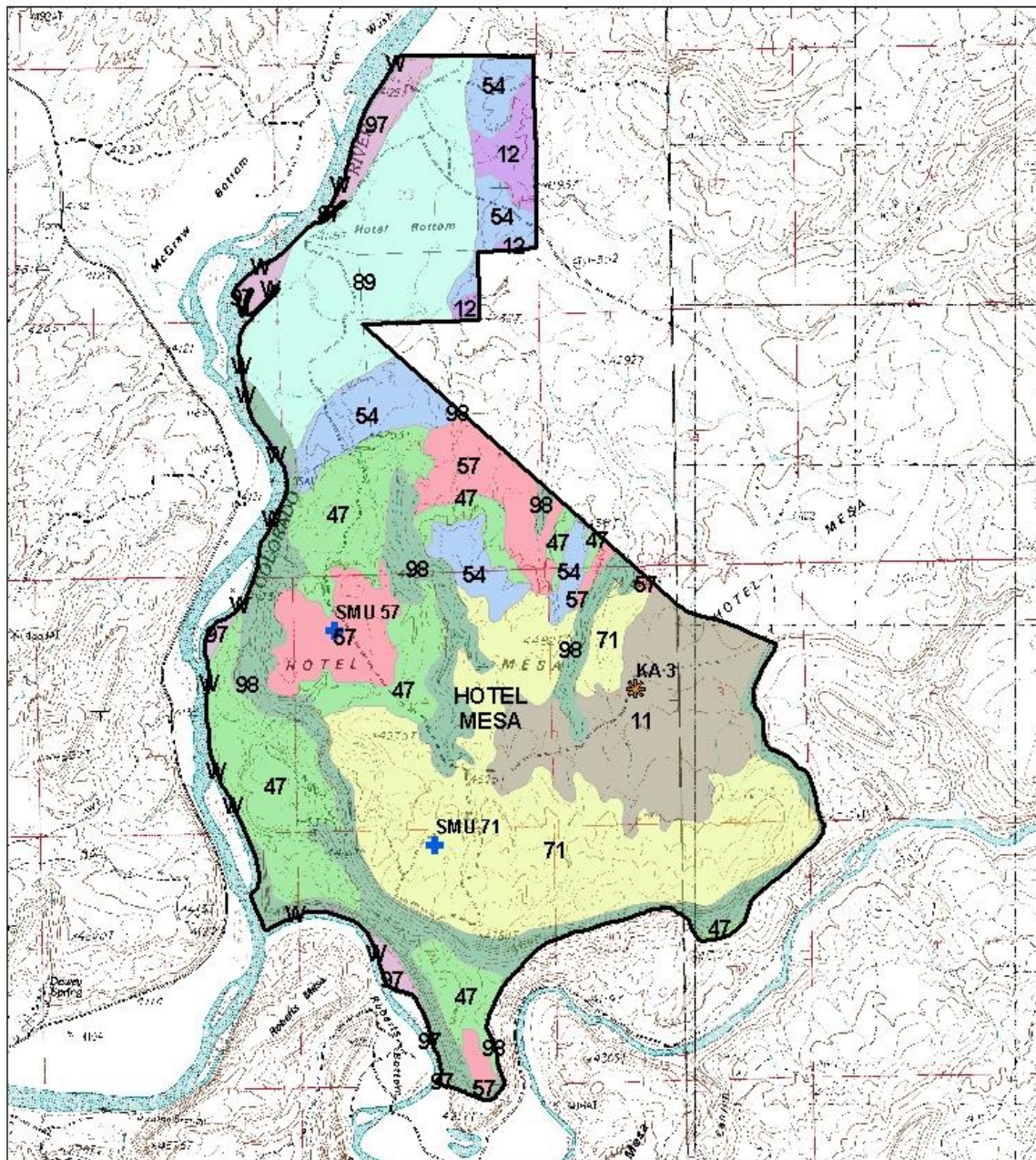
March 22, 2016



No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or application without the data.

Map 6: Hotel Mesa Allotment Soils
Moab Field Office, Canyon Country District

March 22, 2016

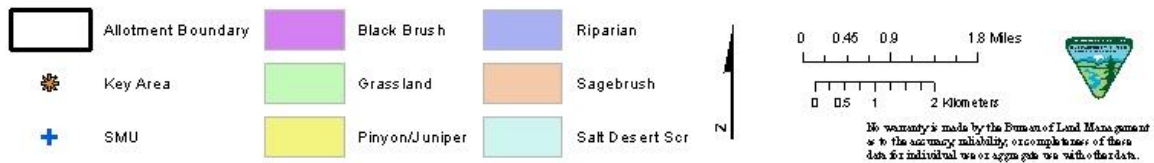
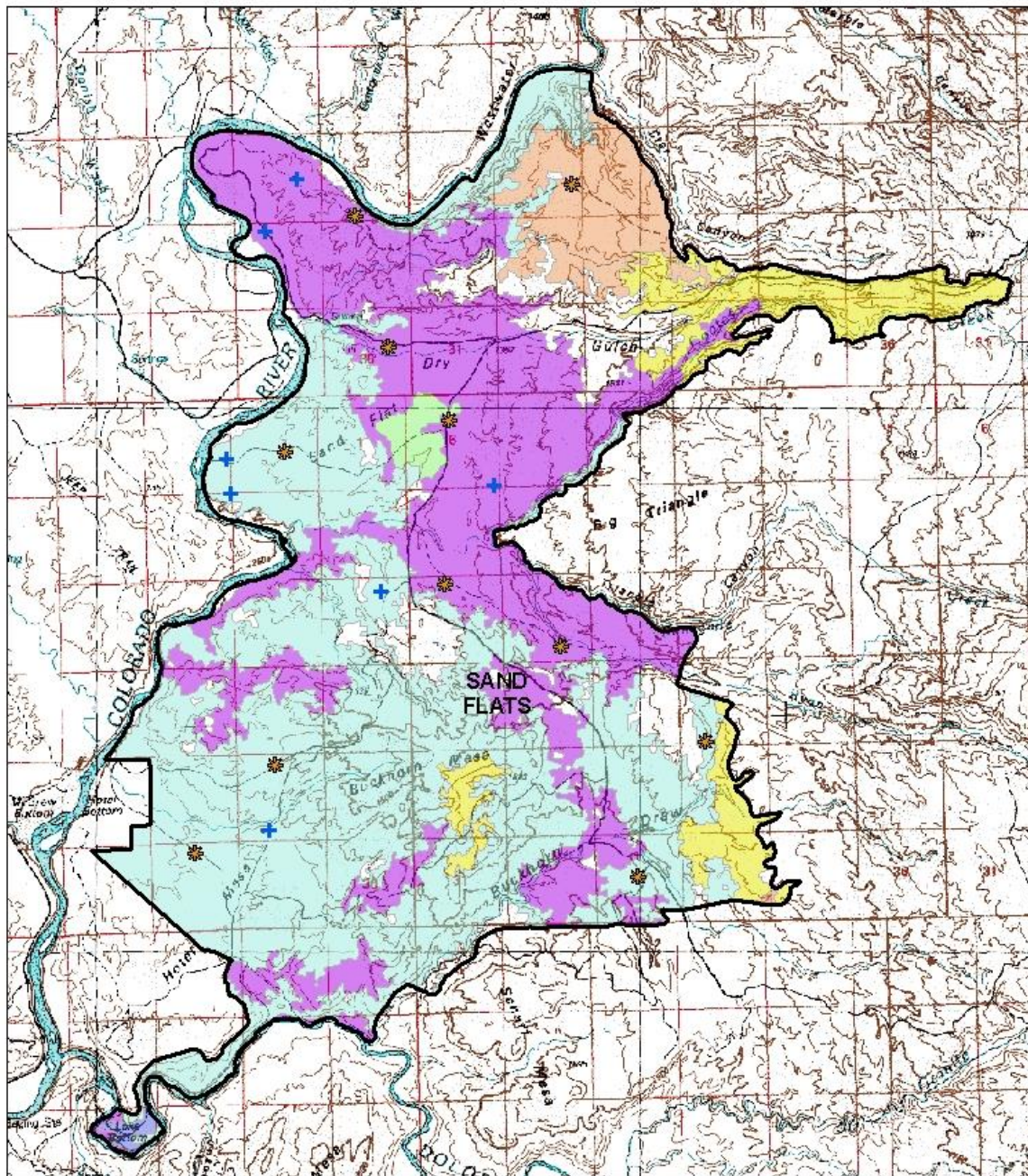


No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or application without the data.

Map 7: Sand Flats Allotment Vegetation

Moab Field Office, Canyon Country District

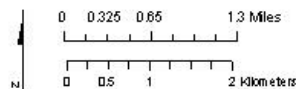
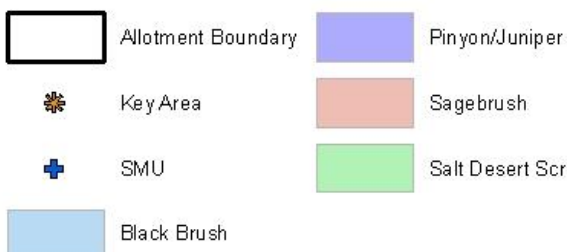
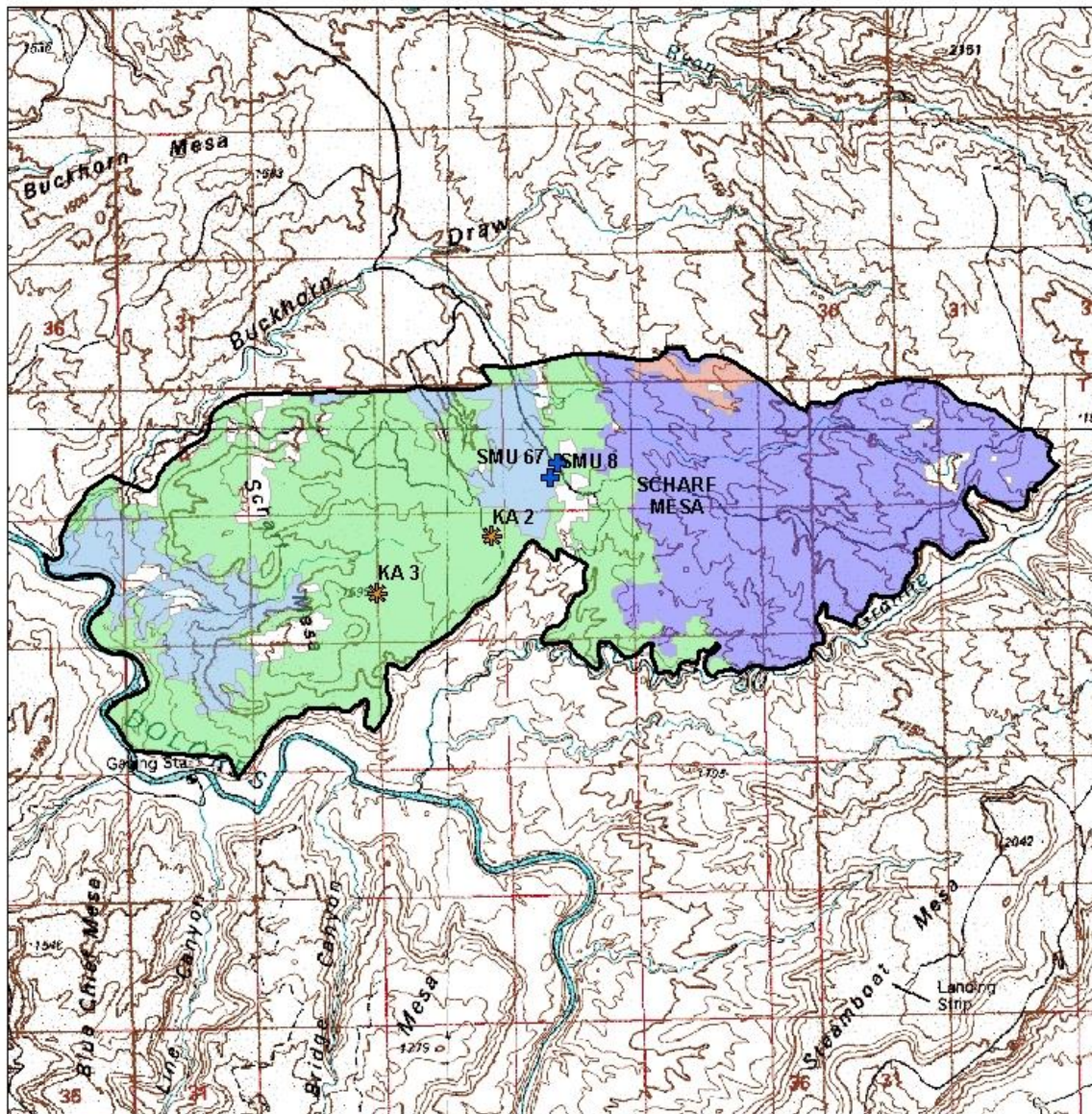
March 22, 2016



Map 8: Scharf Mesa Allotment Vegetation

Moab Field Office, Canyon Country District

March 22, 2016

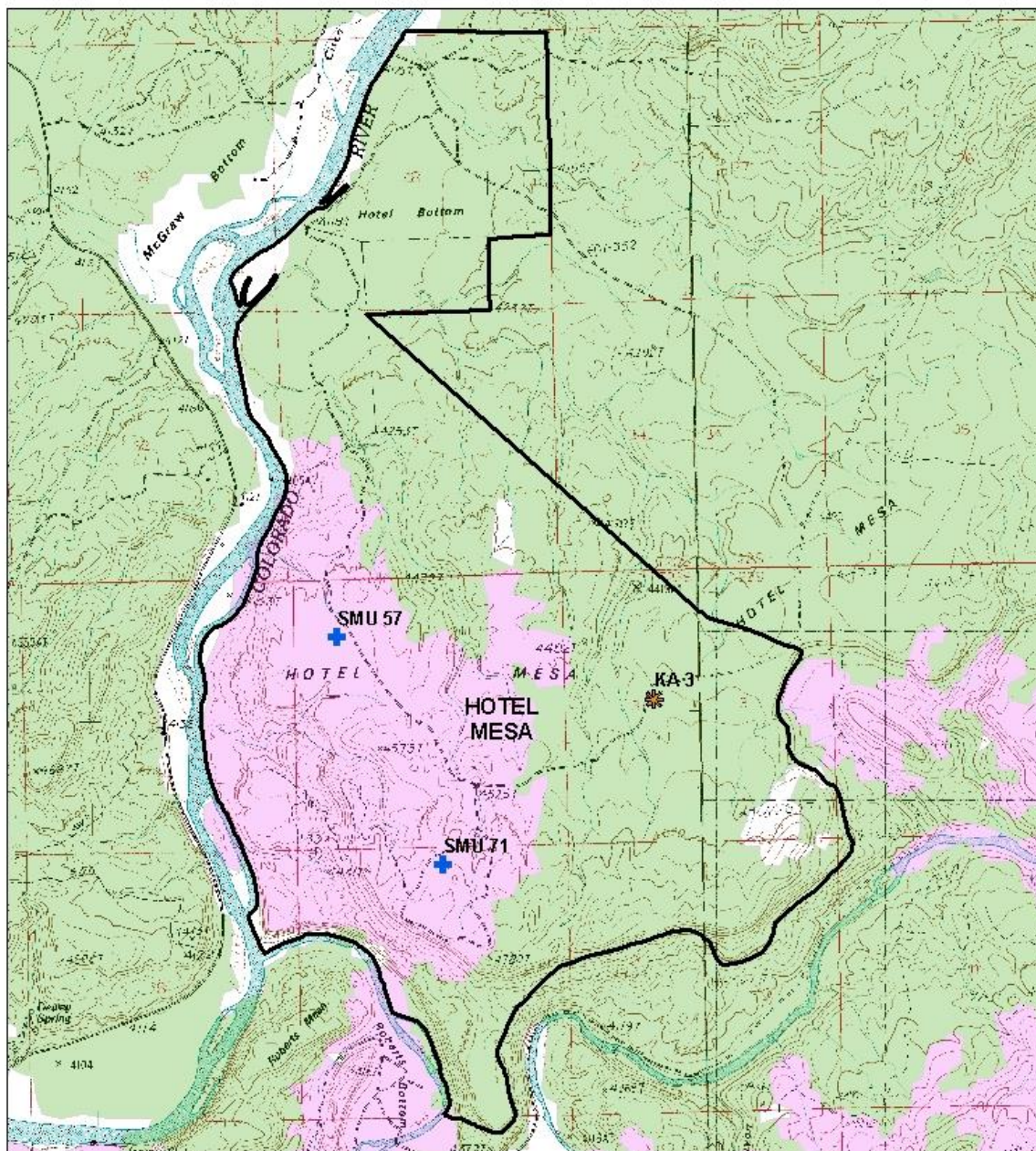


No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or application without the data.

Map 9: Hotel Mesa Allotment Vegetation

Moab Field Office, Canyon Country District

March 22, 2016



Black Brush



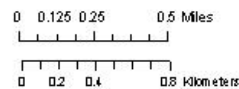
Key Area



SMU



Salt Desert Scr

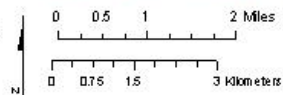
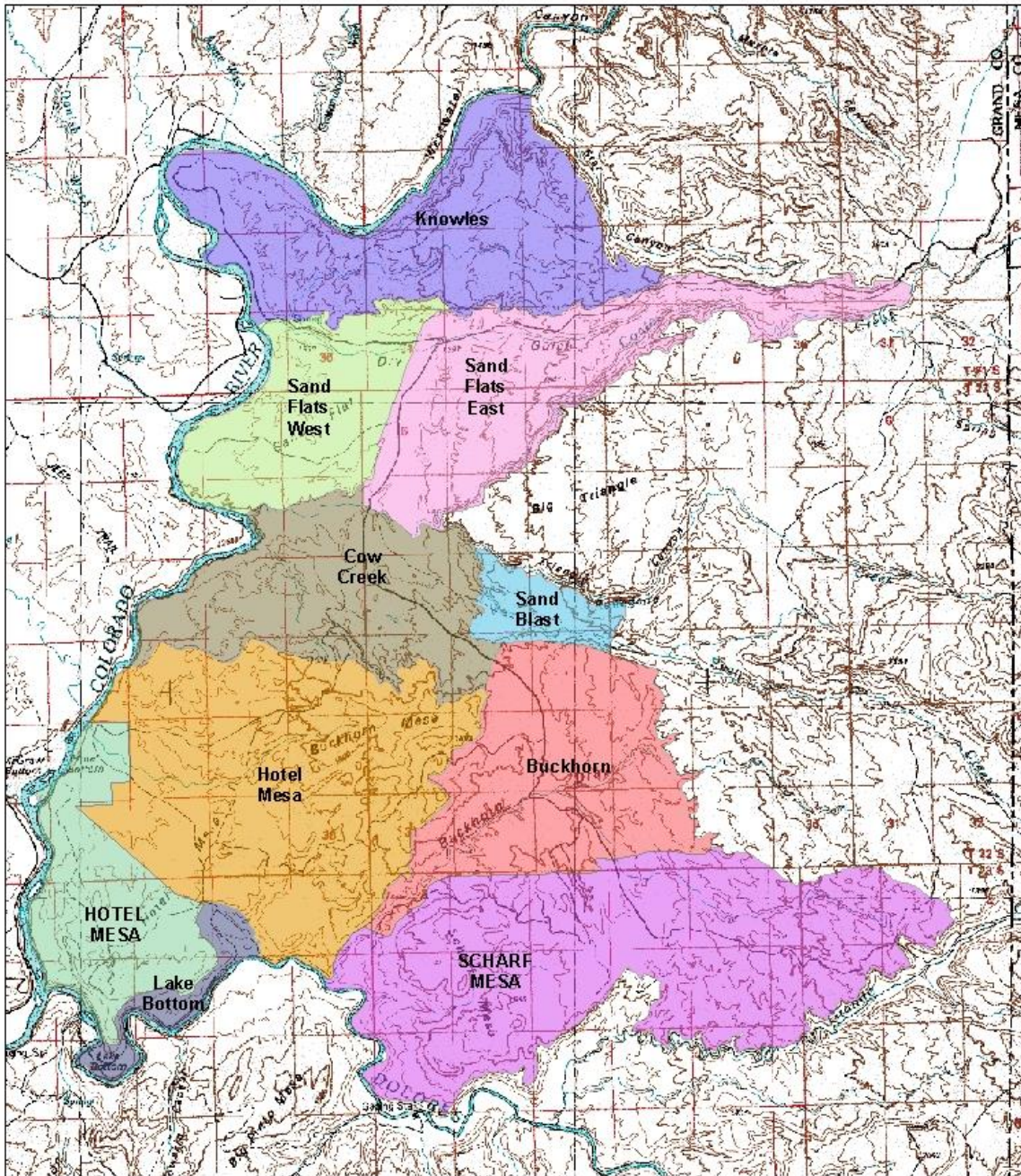


No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or application without the data.

Map 10: Proposed Grazing Schedule (Hotel Mesa, Scharf Mesa, Sand Flats)

Moab Field Office, Canyon Country District

April 12, 2016



No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or application without the data.

APPENDIX B
INTERDISCIPLINARY TEAM CHECKLIST

INTERDISCIPLINARY TEAM CHECKLIST

Project Title: Sand Flats, Scharf Mesa and Hotel Mesa Allotments Ten Year Permit Renewal

NEPA Log Number: DOI-BLM-UT-Y010-2016-0041EA

Grazing Authorization Number: 4300428

Project Leader: David Williams

DETERMINATION OF STAFF: *(Choose one of the following abbreviated options for the left column)*

NP = not present in the area impacted by the proposed or alternative actions

NI = present, but not affected to a degree that detailed analysis is required

PI = present with potential for relevant impact that need to be analyzed in detail in the EA

NC = (DNAs only) actions and impacts not changed from those disclosed in the existing NEPA documents cited in Section D of the DNA form. The Rationale column may include NI and NP discussions.


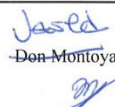



The following elements are not present in the Moab Field Office and have been removed from the checklist:
Farmlands (Prime or Unique), Wild Horses and Burros.

Determination	Resource	Rationale for Determination*	Specialist	Date
NI	Air Quality Greenhouse Gas Emissions	The State of Utah National ambient Air Quality Standards Areas of Non-attainment and Maintenance shows Grand County as an attainment or unclassifiable area. It is unlikely that any potential emissions from the proposed action will cause or contribute to an exceedance of the State of Utah National Ambient Air Quality Standards, or cause or contribute to any localized air quality issues. Therefore, Air Quality will not be discussed further in this EA.	Ann Marie Aubry <i>AmA</i>	5/11/16
NI	Floodplains	The Sand Flats, Scharf Mesa and Hotel Mesa Allotments are currently meeting Utah Rangeland Health Standard #2 (riparian and floodplains). Not all floodplains in these allotments were assessed, but the major floodplains are in good condition. There are no impacts from grazing to these dry wash floodplains.	Ann Marie Aubry <i>AmA</i>	5/11/16
PI	Soils	Grazing can impact soils especially in the spring season. Biological soil crusts are found within portions of these allotments in association with the pinyon juniper and near rock outcrops. Soils will be analyzed in the EA	David Williams <i>DW</i>	5-11/16
NI	Water Resources/Quality (drinking/surface/ground)	Sand Flats, Scharf Mesa and Hotel Mesa Allotments are currently meeting Utah Rangeland Health Standard #4 (water quality). Based on the current soil conditions we can reasonably conclude that these allotments are meeting Utah Rangeland Health Standard #4. Monitoring data will be collected over the term of the permit and adjustments will be made as necessary for BLM to comply with water quality standards established by the State of Utah and the Federal Clean Water and Safe Drinking Water Acts.	Ann Marie Aubry <i>AmA</i>	5/11/16
PI	Wetlands/Riparian Zones	There are 16 riparian areas within Sand Flats Allotment, two riparian areas within Scharf Mesa Allotment and two riparian areas within Hotel Mesa Allotment. All riparian areas are Properly Functioning Condition (PFC) except for less than 1/4 mile of Buckhorn Draw seep is Functioning at Risk (FAR) and 1/2 mile of Coates Creek which is inside of enclosure to keep livestock out is Functioning at Risk. Riparian area will be	Mark Glover <i>for Rev</i>	5/11/2016

Determination	Resource	Rationale for Determination*	Specialist	Date
		analyzed in the EA.		
PI	Fisheries	Will be analyzed in the EA.	Mark Glover <i>KS</i>	5/11/16
NP	Areas of Critical Environmental Concern	No ACECs have been established within these allotments under the current Moab RMP.	Katie Stevens <i>KS</i>	5/11/16
NI	Recreation	Recreational uses include hunting (small and big game species), hiking, jeeping, and ATV use. Recreational uses are low in these allotments.	Katie Stevens <i>KS</i>	5/11/16
<i>NI</i>	Wild and Scenic Rivers	The Colorado River and Dolores River is suitable Wild & Scenic River which exists within these allotments in the 2008 approved Moab RMP.	Katie Stevens <i>KS</i>	5/11/16
NI	Visual Resources	<p>The Scharf Mesa and Hotel Mesa Allotments have a Visual Resource Management (VRM) Class II and VRM Class III rating and Sand Flats Allotment has a VRM Class I, VRM Class II and VRM Class III rating. There are approximately 4,796 acres within VRM Class I, approximately 7,106 acres within VRM Class II and 31,972 acres within VRM Class III rating.</p> <p>A portion of Sand Flats Allotment is within the Westwater Canyon Wilderness Study Area (WSA) and is in a VRM Class I and this area overlooks the Westwater Canyon of the Colorado River.</p> <p>Objective for VRM I Class is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape would be very low and must not attract attention. This category is within the Westwater Canyon WSA within the Sand Flats Allotment. Majority of this VRM Class is on a mesa top and within the Westwater Canyon of the Colorado River. Livestock use has been slight to light over the years. This area makes up a small portion of the project area.</p> <p>Objective for VRM II Class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color and texture found in the predominant natural features of the characteristic landscape. This VRM Class makes up small portion of the project area. Livestock grazing have been light to moderate use within Sand Flats, Scharf Mesa and Hotel Mesa Allotments</p> <p>Objective for VRM III Class rating allows contrasts to the basic visual elements to be evident, but subordinate to the existing landscape. The management goal is to partially retain the existing character of the landscape, while allowing moderate changes.</p> <p>The use of neutral, non-reflective earth-tone colors on any above ground facilities as requested by the BLM would reduce visual impacts. Livestock grazing is allowed in all the VRM Classes. The Impacts from the proposed action and</p>	Katie Stevens <i>KS</i>	5/11/16

Determination	Resource	Rationale for Determination*	Specialist	Date
		alternatives would be allowable in all VRM Classes as long as they don't change the objectives for each VRM Class. The proposed action would not result in substantial impacts to visual resources in this area, either singularly or cumulatively. This analysis was completed from transportation corridors offering a potential view of the proposed action. The proposed action and other alternatives would not exceed the criteria for these VRM Classes. Consequently, it has been determined that there would be no appreciable impacts to the visual resources under any of these alternatives, so they are not addressed further in this EA.		
NP	BLM Natural Areas	There are no BLM Natural Areas within these allotments, as defined in the 2008 Moab RMP.	Bill Stevens BJS	5-11-16
NI	Socio-Economics	<p>Livestock grazing is an important part of the local custom, culture, and economy of Grand County and is supported in the County's Master Plan.</p> <p>Public lands' grazing is a very small part of the planning area's economy. Economic activity associated with the proposed action is a small part of that already small sector. Any employment and labor income associated with the proposed action, although small, would likely occur outside the planning area, as the permittees resides in Grand Junction, Colorado.</p> <p>Permit fees associated with AUMs generate revenue for the U.S. Treasury, of which 12.5% is returned to the local State of Utah Grazing Advisory Board. This money is then disbursed to local permittees (a direct economic benefit), for use in range improvements and maintenance of projects. An additional 25% of permit fees is returned to the BLM Field office from which it was collected to be used in on-the-ground range improvements.</p> <p>Reduction in ranching-based income could make it more difficult for families to earn a living on ranching alone. Family members may have to get second jobs or work off the farm to bring in additional income. However, none of the alternatives analyzed in this EA proposes any changes in the authorized AUMs, or any other changes that would likely cause any more than minimal changes to the operating costs of the permit holder or local economy. Consequently, there would be no social or economic impacts to the livestock operator who graze these allotments, or to the local communities. This issue is therefore not addressed further in this EA.</p>	Bill Stevens BJS	5-11-16
NI	Wilderness/WSA	<p>Although there is no designated wilderness in these allotments, portions of the Sand Flats allotment encompass the Westwater Canyon WSA. WSAs are managed under the BLMs Manual 6330, Management of Wilderness Study Areas (July, 2012). The WSAs are managed so as not to impair their suitability for Congressional designation as Wilderness. Generally this means that no new surface disturbance or permanent placement of structures is allowed, although existing developments and resource uses may continue to be maintained and operated. (Manual 6330, 1.6.D.3)</p> <p>Livestock grazing is an historical use that was identified as an acceptable use under the Wilderness Act of 1964. The law provides for, and the BLM's policy is to allow, continuation of</p>	Bill Stevens BJS	5-11-16

Determina- tion	Resource	Rationale for Determination*	Specialist	Date
		<p>grazing leases in WSAs in the manner and degree in which these uses were being conducted at the date of the enactment of Federal Lands Policy Management Act (FLPMA), as long as they do not cause unnecessary and undue degradation of the lands. This is referred to as a "grandfathered" use. Grazing was occurring in the Sand Flats allotment at the time of wilderness inventory in the late 1970's and early 1980's, and also at the time of the enactment of FLPMA (October 21, 1976).</p> <p>Although there is no designated wilderness in Sand Flats, Scharf Mesa and Hotel Mesa Allotments, a portion of the Sand Flats grazing Allotment (4,919 acres) is encompasses the Westwater Canyon WSA. During the wilderness review, it was determined that historical livestock grazing in the Sand Flats Allotment did not impair the areas wilderness suitability, and the nature of the grazing in the next ten years is not expected to change. There are no proposals at this time for new developments or surface disturbing activities that would affect wilderness characteristics. Any such developments or activities that may be proposed in the future would be considered on a case-by-case basis, and impacts to wilderness values would be assessed and mitigated at the appropriate time. Therefore, impacts to wilderness characteristics associated with continuation of grazing are not an issue that will be analyzed further in this NEPA document. Scharf Mesa and Hotel Mesa Allotments have no WSA.</p>		
NI	Lands With Wilderness Characteristics	<p>Sand Flats Allotment includes 4,322 acres identified as having wilderness characteristics in the 2007 Wilderness Characteristic Review undertaken by the Moab FO as part of its 2008 RMP.</p> <p>The Scharf Mesa Allotment includes 3,768 acres identified as having wilderness characteristics in the 2007 Wilderness Characteristic Review undertaken by the Moab FO as part of its 2008 RMP.</p> <p>The Hotel Mesa Allotment has no lands with Wilderness Characteristic identified in 2007 Wilderness Characteristic Review.</p> <p>Additional acreage was identified post-RMP as part of the Big Triangle wilderness characteristics review of October, 2012, following the guidelines of Manual 6310: Conducting Wilderness Characteristics Inventory on BLM Lands March, 2012)</p> <p>The 2008 Moab Proposed RMP/EIS analyzed the impacts of grazing on a wide variety of resources, including wilderness characteristic. Section 4.3.8.2.4 states:</p> <p><i>Livestock grazing is guided by livestock objectives set in the Standards for Rangeland Health and Guidelines for Grazing Management. Proper levels of livestock use are guided by these objectives, thus, it is not anticipated that livestock grazing would have impacts on non-WSA land with wilderness characteristic under any alternatives because meeting these objectives would not permit degradation of the lands. When</i></p>	<p>Bill Stevens</p> <p>PS</p>	<p>S-11-16</p>

Determination	Resource	Rationale for Determination*	Specialist	Date
		<p><i>livestock use is properly managed, it would not affect the appearance of naturalness. Grazing assessments completed by MFO staff and any subsequent actions taken to remedy impending issues would enhance the natural character of non-WSA lands with wilderness characteristic. Further, improved natural condition would sustain the setting needed to support opportunities for primitive and unconfined recreation and the experience of solitude that visitors seek.</i></p> <p>The current grazing operations in the Sand Flats, Scharf Mesa and Hotel Mesa Allotments were among the uses occurring on these lands at the time the BLM inventory was completed. Therefore, continuance of grazing under the same terms and conditions would not introduce any change agents that would alter conditions or result in loss of wilderness characteristics (naturalness, opportunity for solitude, primitives and unconfined recreation supplemental values) or the determination that the lands have wilderness characteristics. Given this, wilderness characteristic will not be addressed further in this NEPA document.</p>		
NI	Cultural Resources	<p>The BLM followed IM UT 2010-026 and 36 CFR 800 to determine if permitting cattle on these allotments would impact cultural resources. As per the IM, BLM monitored sites on these allotments and performed inventories at locations where livestock tend to congregate. The BLM found 7 sites eligible to the National Register of Historic Places in congregation areas, but grazing was not affecting the integrity of the sites. The BLM, therefore, made a finding of No Adverse Effect. Details of these findings are discussed in the cultural Resource Inventory Report U-16-BL-0222. BLM will include the report in the FONSI/Final EA. The BLM sent a letter to the Utah SHPO with BLM's determinations of eligibility and effect in accordance with 36CFR800 on 4/21/2016. The Utah SHPO concurred with BLM's determinations on April 28, 2016. The BLM also sent consultation letter to the Hopi, Southern Ute, Ute Mountain Ute, Northern Ute, Zuni, Jemez, and Navajo tribes to determine if livestock grazing might impact cultural resources not identified during fieldwork on 4/21/2016.</p>	<p>M. Jared Lündell</p> 	5-11-16
NI	Native American Religious Concerns	<p>BLM sent letters to the Hopi, Southern Ute, Ute Mountain Ute, Northern Ute, Zuni, Jemez, and Navajo tribes on 4/21/2016. At the present time the Moab BLM has not received any comments regarding Native American Religious Concerns on the Sand Flats, Scharf Mesa and Hotel Mesa Allotments.</p>	<p> Don Montoya</p>	5-11-16
NI	Environmental Justice	<p>The proposed action and alternatives would not result in disproportionately high and adverse human health or environmental effects to minority or low income populations.</p>	<p>Bill Stevens</p> 	5-11-16
NP	Wastes (hazardous or solid)	<p>Livestock grazing at the proposed levels would not require nor produce hazardous or solid wastes as defined by the Resource Conservation and Recovery Act (RCRA) or the Comprehensive Environmental Response Compensation and Liability Act (CERCLA).</p>	<p>David Pals</p> 	5/11/16
PI	Threatened, Endangered or Candidate Animal Species	<p>Will be analyzed in the EA.</p>	<p>Pamela Riddle</p> 	5/19/16

Determination	Resource	Rationale for Determination*	Specialist	Date
PI	Migratory Birds	Will be analyzed in the EA.	Pamela Riddle PR	5/12/16
PI	Utah BLM Sensitive Species	Will be analyzed in the EA. Presence of Utah Sensitive species in this allotment was determined by consulting the latest (June 2010) Utah Natural Heritage Division sensitive species data base. <u>Utah BLM Sensitive Species</u> Bald Eagle, Bluehead sucker, Roundtail club, Flannelmouth sucker are known inhabit these allotments.	Pamela Riddle PR	5/19/16
PI	Wildlife Excluding USFW Designated Species	Will be analyzed in the EA. There is deer, elk and bighorn sheep habitat within these allotments.	Pamela Riddle PR	5/19/16
NI	Invasive Species/Noxious Weeds	On-going coordination exists between the BLM and Grand County to control the spread of noxious weeds on public lands. The emergency feeding of hay is limited on public lands and is restricted to weed free certification. The proposed action is expected not to result in the introduction or spread of noxious weed species to the area. Cheatgrass and Russian thistle are located in some areas of these allotments, but there is no effective plan for control and eradication of these Non-native species. There are some areas along the Colorado and Dolores Rivers which has Russian knapweed plants	Jordan Davis JD	5/11/16
PI	Threatened, Endangered or Candidate Plant Species	The Jones Cycladenia Model show potential habitat within Sand Flats, Scharf Mesa and Hotel Mesa Allotments. At the present time there are no known populations of Jones Cycladenia within these allotments. There may be one sensitive plant species within Sand Flats, Scharf Mesa and Hotel Mesa There is one sensitive plant species within these allotments which is <i>Lygodensmia Grandiflora</i> var. <i>Doloresensis</i> (Dolores rushpink). The Dolores rushpink is found in juniper, sagebrush rabbitbrush, and blackbrush communities in reddish alluvial soil, at 4,600 to 4,700 feet in elevation and flowers in June. There is a lack of plant surveys for these plants and at the present time there are no known populations of this sensitive plant species.	David Williams DW	5/11/16
PI	Livestock Grazing	Will be analyzed in the EA	David Williams DW	5/11/16
PI	Rangeland Health Standards	Majority of the Sand Flats allotment (98½%) is meeting Utah's Rangeland Health Standard (RHS). However, there is approximately 180 acres within Sand Flats East Pasture and 300 acres within the Sand Flats West Pasture is rated as "not meeting" standards. There are apparent ecological shifts occurring in these acres caused by insect problems with shrubs, pass droughts and historic livestock use in the spring months. . Scharf Mesa and Hotel Mesa Allotments are meeting Utah's Rangeland Health Standard.	David Williams DW	5/11/16
PI	Vegetation Excluding USFW Designated Species	Will be analyzed in the EA	David Williams DW	5/11/16
NI	Woodland / Forestry	Over half the allotments have scatter pinyon and juniper within the blackbrush communities. There would be no impact due to livestock grazing.	Jordan Davis JD	5/11/16

Determination	Resource	Rationale for Determination*	Specialist	Date
NI	Fuels/Fire Management	<p>Sand Flats Allotment: When the Sand Flats grazing allotment is overlaid with Fire Management Units (FMU) 12, 13 & 14 and the fire history GIS data layer, it shows that there have been 14 fires in the project area. Although fires have started in the area, data shows that they typically do not spread with the largest fires being the Little Hole and Cisco Ramp fires burning 476 acres in 1985. Fuels in the area, due to soil conditions are generally sparse and unable to sustain fire spread. In wet years cheatgrass proliferation can drive fires spread. Fuels reduction/restoration and Emergency Stabilization and Rehabilitation (ES&R) actions could preclude grazing for periods of time within the grazing allotment consistent with the Moab Resource Management Plan (RMP.2008 GRA-11 pg. 69). The proposed actions would not result in substantial impacts to fuels/fire resources in this area, either singularly or cumulatively. No further analysis is needed.</p> <p>Scharf Mesa Allotment: When the Scharf Mesa grazing allotment is overlaid with Fire Management Units (FMU) 13 & 14 and the fire history GIS data layer, it shows that there have been 3 fires in the project area. Although fires have started in the area, data shows that they typically do not spread with the largest fires being 167 acres in 1984. Fuels in the area, due to soil conditions are generally sparse and unable to sustain fire spread. Fuels reduction/restoration and Emergency Stabilization and Rehabilitation (ES&R) actions could preclude grazing for periods of time within the grazing allotment consistent with the Moab Resource Management Plan (RMP.2008 GRA-11 pg. 69). The proposed actions would not result in substantial impacts to fuels/fire resources in this area, either singularly or cumulatively. No further analysis is needed.</p>	Josh Relph	5/1/16
		<p>Hotel Mesa Allotment: When the Hotel Mesa grazing allotment is overlaid with Fire Management Units (FMU) 13 & 14 and the fire history GIS data layer, it shows that there have been 2 fires in the project area. Although fires have started in the area, data shows that they typically do not spread with the largest fires being the 15 acres Parkway 4 fire in 1982. Fuels in the area, due to soil conditions are generally sparse and unable to sustain fire spread. Fuels reduction/restoration and Emergency Stabilization and Rehabilitation (ES&R) actions could preclude grazing for periods of time within the grazing allotment consistent with the Moab Resource Management Plan (RMP.2008 GRA-11 pg. 69). The proposed actions would not result in substantial impacts to fuels/fire resources in this area, either singularly or cumulatively. No further analysis is needed.</p>		
NI	Geology / Mineral Resources/Energy Production	Geology/Mineral Resources on these allotments are imbedded in bedrock and therefore will not be impacted by livestock grazing. At the present time there are no energy production activities occurring within these allotments. Energy production will not be impacted by livestock grazing.	David Pals	5/1/16
NI	Lands/Access	Renewal of the grazing authorization would not affect existing access or rights-of-ways in these allotments.	Jan Denney	5/1/16
NI	Paleontology	The geologic formations within these allotments are known to contain vertebrate and invertebrate fossils. However, the fossils are imbedded in bedrock and therefore would not be	Rebecca Hunt-Foster	5/1/16

Determi- nation	Resource	Rationale for Determination*	Specialist	Date
\		impacted by livestock grazing.		

FINAL REVIEW:

Reviewer Title	Signature	Date	Comments
Environmental Coordinator	<i>Bebecca D. Little</i>	5/26/2016	
Authorized Officer			

APPENDIX C

Precipitation Data

Dolores Triangle Rain gauge

Years	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07
Inches of Precipitation and Percent of Average	12.45" (105%)	14.05" (118%)	9.1" (76%)	9.9" (83%)	8.7" (73%)	10.75" (90%)	10.25" (86%)	13.35" (112%)	11.25' (94%)	10.9" (91%)
Years	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15		
Inches of Precipitation and Percent of Average	12.75" (107%)	7.35" (62%)	12.15" (102%)	13.2" (111%)	5.4" (45%)	11.7" (98%)	10.55" (89%)	15.85" (133%)		

- Average Precipitation is 11.92" Drought years (red color)

Sand Flats (Dolores Triangle) Rain gauge

Years	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07
Inches of Precipitation and Percent of Average	8.8" (95%)	11.25" (121%)	5.8" (62%)	9.55" (103%)	5" (54%)	8.7" (94%)	7.9" (85%)	12.6" (136%)	8.1' (87%)	7.55" (81%)
Years	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15		
Inches of Precipitation and Percent of Average	10.7" (115%)	6.5" (70%)	10.7" (115%)	11" (118%)	5.3" (57%)	9.8" (106%)	9.8" (106%)	12.6" (136%)		

- Average Precipitation is 9.29" Drought years (red color)

Jay Van Loan) Rain gauge

Years	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07
Inches of Precipitation and Percent of Average	15.6" (104%)	16.8" (112%)	10.68" (71%)	14" (93%)	11.7" (78%)	12.93" (86%)	14.72" (98%)	21.51" (143%)	16.22' (108%)	17.95" (120%)
Years	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15		
Inches of Precipitation and Percent of Average	14.02" (94%)	12.53" (84%)	14.41" (96%)	18.28" (122%)	9.34" (62%)	14.44" (96%)	17.81" (119%)	17.03" (114%)		

- Average Precipitation is 15" Drought years (red color)

APPENDIX D

Evaluation of Utah's Standards for Rangeland Health for the Sand Flats, Scharf Mesa and Hotel Mesa Allotments

SAND FLATS ALLOTMENT RANGELAND HEALTH EVALUATION
SEPTEMBER 2013 and updated in 2015

Site/Area: Sand Flats Allotment

BLM Acres: 31,754

Dates of Range Assessments/Visits: August 11, 2009 and August 12, 2009

Date of Rangeland Health Evaluation: September 2009

The old Buckhorn Allotment was divided into two allotments (Buckhorn and Sand Flats Allotments) in 2003 with different permittees and AUMs was also divided between these allotments.

Rangeland health assessments were conducted on the allotment during the spring of 2009. The 17 Indicators of Rangeland Health were used to evaluate the health of the allotment. The indicators are primarily qualitative with several that are quantitative, which focuses on individual indicators and later combines several indicators to help in assessing the soils, hydrology, and vegetation.

Assessment sites were selected using soil map units (SMU). Each SMU includes a complex of several different ecological sites; these sites are different in vegetation composition, soil type, and texture. Within several of the ecological sites the Bureau of Land Management (BLM) has established monitoring sites. The monitoring sites are called key areas (KA). KA have had trend data, apparent trend and utilization completed for nine years and track the changes in vegetation at the sites. This information is used to help determine the amount of disturbance that livestock and wildlife has on the sites.

Upland assessments were conducted on SMUs 7, 12, 47, 55, 66, 67, 71, 89 and 98 (refer to the USDA, Soil Survey of Canyonlands Area, Utah, Parts of Grand and San Juan Counties, 1991). The assessments areas are named KA-7, KA-8, KA-13, KA-14, KA-15, KA-16, KA-17, KA-21, KA-24, KA-27, KA-39; and SMU 12, 47, 71, 89 and 98.

Riparian assessments were conducted using proper functioning condition methodology. Riparian assessments were conducted on the Dolores River, Dolores River Oxbow, Colorado River, Cane Spring (wetland portion on State Lands), Cane Creek (stream portion), Coates Creek, Buckhorn Spring, Buckhorn Draw Seep (old cabin site), Buckhorn Draw Seep, Sand Flat Seep, Dry Gulch Seeps, Ryan Creek, Lower Renegade Creek, two small unnamed seeps and Cow Creek

The Sand Flats Allotment is located in the Dolores Triangle of southeast Utah. The allotment is divided into seven pastures. The Sand Blast Pasture includes KA-39 and Ryan Creek. The Knowles Pasture includes KA-16, KA-27, SMU-12, SMU-89 and Colorado River. The Sand Flat East Pasture includes KA-14, SMU-71, Coates Creek, Dry Gulch Seeps, Sand Flats Seep, and two small unnamed seeps. The Sand Flat West pasture includes KA-15, KA-17, SMU-12, SMU-89, Colorado River and Cane Spring (wetland portion on State Land) and Cane Creek (stream portion). The Cow Creek Pasture includes KA-7, SMU-47, Colorado River, Coates

Creek, Ryan Creek, Cow Creek and Renegade Creek. The Hotel Mesa Pasture includes KA-8, KA-13, SMU-98, Dolores River, Dolores River Oxbow and Colorado River. The Buckhorn Pasture includes KA-21, KA-24, Buckhorn Spring, Buckhorn Draw Seep (old cabin site) and Buckhorn Draw Seep.

Compliance with Rangeland Health Standards:

The following list shows the acreage in the allotment and the current active federal cattle AUMs, suspended AUMs, season of use, number and kind of livestock within the allotment:

Table 1: Current Grazing Use Authorization

Allotment Name and Number	Grazing Authorization Number	Livestock			Active Permitted Use (AUMs)	Suspended (AUMs)	Acres	Land Status
		No.	Kind	Season of Use				
Sand Flats 00013	4300428	164	Cattle	10/01 to 05/31	1,234*	1,823	31,754 1,446 597	BLM State Private

*The permittees for the Sand Flats Allotment has 1,234 active AUMs of permitted use on BLM which is 94% public lands and additional 74 AUMs which is on State Lands.

Assessment Sites (KA and SMU sites)	Standards											Trend	Rating By Pasture				
	Upland Soil			Riparian and Wetland Areas*				Desired Species					Water Quality**	Long Term***			
	a	b	c	a	b	c	D	a	b	c	d	e					
Buckhorn KA-10				Riparian assessments were conducted in 2009 thru 2012. There are approximately 32 miles of lotic riparian system (streams) and 11½ acres of lentic riparian system (wetlands) within the allotment. Majority of the riparian areas were rated as properly functioning condition (PFC), with the exception of ½ mile of Coates Creek and Buckhorn Draw Seep (by old cabin site)> ¼ mile. The segment of Coates Creek and Buckhorn Draw seep are rated as functioning at risk condition (FAR). The Coates Creek ½ mile section includes two livestock exclosures which is also rated at FAR. Overall majority of the riparian and wetland areas are meeting this Standard which amounts to 98% of all the riparian areas are meeting.								Activities on BLM lands will fully support the designated beneficial uses described in the Utah water quality standards (R.317-20 for surface and groundwater. Utah water quality standards do not apply to ephemeral drainages and the associated storm runoff flows. Based on the available water quality data, current soil and floodplain condition's in the allotment, we can reasonably conclude the Sand flats Allotment is meeting Utah Rangeland Health Standard #4.					
															Slightly Up	Met	
Buckhorn KA-21	Met	Met	Met						Met	Met	Met		Met	Met		Up	
Buckhorn KA-22																Slightly Up	
Buckhorn KA-24	Met	Met	Met						Met	Met	Met		Met	Met		Up	
Buckhorn Exclosure KA-35																Static	
Sand Blast KA-39	Met	Met	Met						Met	Met	Met		Met	Met		Static	Met
Cow Creek SMU-47	Bmet	Met	Met						Met	Met	Met		Met	Met			Met
Cow Creek KA-7	Met	Met	Met						Met	Met	Met		Met	Met		Static	
Hotel Mesa KA-8	Met	Met	Met						Met	Met	Met		Met	Met		Static	Met
Hotel Mesa KA-9																Static	
Hotel Mesa KA-13	Met	Met	Bmet						Bmet	Met	Bmet		Met	Met		Slightly Up	
Hotel Mesa SMU-98	Met	Met	Met						Met	Met	Met		Met	Met			
Hotel Mesa Exclosure KA-34																Static	
Knowles KA-16	Met	Met	Bmet						Met	Met	Met		Met	Met		Static	Met
Knowles KA-27	Met	Met	Met						Met	Met	Bmet		Met	Met		Static	
Knowles SMU-12	Met	Met	Bmet						Met	Met	Bmet		Met	Met			
Knowles SMU-89	Bmet	Met	Bmet						Bmet	Met	Met		Met	Bmet			
Knowles KA-28																Up	
Sand Flats East KA-14 estimated 180 acres	Not Met	Met	Not Met						Not Met	Met	Not Met		Met	Not Met		Slightly Up	Met
Sand Flats East KA-6																Slightly Up	
Sand Flats East SMU-89	Bmet	Met	Bmet						Met	Met	Met		Met	Met			
Sand Flats East Exclosure KA-36																Static	
Sand Flats West KA-15	Met	Met	Bmet						Met	Met	Met		Met	Met		Static	Met
Sand Flats West KA-17	Met	Met	Bmet						Bmet	Met	Bmet		Met	Bmet		Up	
Sand Flats West SMU-89 estimated 160 acres	Met	Met	Not Met						Not Met	Met	Not Met		Met	Not Met			
Sand Flats West SMU-12	Met	Met	Bmet						Met	Met	Met		Met	Met			
Sand Flats East KA-14 represent estimated 140 acres within Sand Flats West Pasture	Not Met	Met	Not Met						Not Met	Met	Not Met		Met	Not Met		Slightly Up	
Sand Flats West KA-1																Slightly Up	
Overall Rating of	Met			Met	Met					Met		Met	Static to	Met			

Standards					Slightly Up
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Bmet=Borderline met. *PFC assessment done in 2009-2012. **Data obtained from hydrology/PFC assessment for riparian.
 ***Data from Long Term Trend Studies (See Appendix A).

There are three areas that are not meeting standards which are Sand Flats East Pasture KA-14 which represents 180 acres; Sand Flats West Pasture next to Sand Flats East Pasture by KA-14 which represents 140 acres and SMU-89 Sand Flats West Pasture which represents 160 acres. These three areas represent 1½ percent of the total BLM acres within the allotment. Majority of the Sand Flats Allotment is meeting standards. BLM will address measures to help improve these areas at the time of permit renewal this may include Allotment Management Plan to allow spring rest in these two pastures and other pastures.

Standard #1 Upland Soils: Upland soils exhibit permeability and infiltration rates that sustain or improve site productivity, considering the soil type, climate, and landform:

Indicators of Rangeland Health, soil stability test and line intercept data were used to evaluate this standard:

Indicators of Rangeland Health:

1. Rills
2. Water flow patterns
3. Pedestals and/or teracettes
4. Bare ground %
5. Gullies
6. Wind-scoured blowouts and depositional areas
7. Litter movement
8. Soil surface resistance to erosion
9. Soil surface loss or degradation
10. Plant community composition and distribution relative to infiltration and runoff
11. Compaction layer
12. Functional/structural groups
14. Litter amount
16. Invasive/noxious weeds

- a) **Sufficient cover and litter to protect the soil surface from excessive water and wind erosion, promote infiltration, detain surface flow, and retard soil moisture loss by evaporation.**

Sand Flats West Pasture: As documented in the Indicators of Rangeland Health data sheets:

These three key areas (KA-17, SMU-12 and SMU-89) show no water flow patterns. Water flow patterns on KA-15 show more water flow patterns on the slopes and is rated as slight to moderate from what is expected.

Bare ground at two key areas (KA-15 and KA-17) matches what is expected for these sites and KA-17 has 8 to 10% biological soil crusts which are helping to protecting the soil surface from erosion. SMU-12 the amount of cheatgrass cover and litter within this site has reduced the amount of bare ground to 20 to 22% from what is expected for this site. SMU-12 should have 40

to 50% bare ground which is rated as slight to moderate. SMU-89 amount of bare ground is moderately greater than what is expected for the site due to the reduction of perennial plants and the site represents an approximately 160 acres which is a small portion of this pasture. Generally, soil moisture loss through surface evaporation can be directly correlated to the percentage of bare ground. Therefore, direct soil moisture loss at the soil surface has not increased at the three upland sites (KA-15, KA-17 and SMU-12) due to annual inputs of herbaceous vegetative cover, some rock cover, some biological soil crust and litter in relation to ecological potential; however SMU-89 has an increase in bare ground and has some soil moisture loss through surface evaporation within this site.

Three key areas (SMU-12, KA-17 and SMU-89) show no wind scoured and blowouts or depositional areas. KA-15 exhibits infrequent and few depositional areas and no wind scoured or blowout areas.

All four sites show uniform distribution of litter to protect the soil surface from erosion and litter is staying in place.

SMU-89 soil stability matches what is expected for the site. SMU-12 exhibits slight to moderately less soil stability and at the present time the soil surface is stable. The soil surface for KA-17 is rated as 2.8 which are moderately less soil stability, however at the present time the soil surface is stable. KA-15 soil surface rating is 2 which are below what is expected for the site (4 to 5 rating) however, the soil surface is stable at the present time. All four upland sites visited within this pasture during the field assessments exhibited sufficient cover which includes some biological soil crust, some rock cover, vegetation cover and litter relative to site potential to protect the soil from excess erosion from wind and water.

There is no soil surface loss or degradation within all the sites and soils surface is stable.

All sites show no sign of accelerated erosion. There has been some change in infiltration due to the increase in the amount of cheatgrass within all sites. There has been moderate reduction in infiltration within KA-15 and KA-17. There has been slight to moderate reduction in infiltration within SMU-12 and SMU-89. Also the amount of salt in the soil in SMU-89 has reduced the infiltration of this site.

KA-17 and SMU-12 soil pits show no compaction layer. KA-15 soil pit shows a slight compaction layer and roots were evident throughout all the soil layers. SMU-89 soil pit shows moderate salt layer which is affecting the roots but the roots are still evident throughout all the soil layers.

Litter movement within all the sites are staying in place and fairly uniform.

Cheatgrass is common throughout all these sites, which is increasing the amount of fine litter. The amount of litter at KA-15 is 40 to 42% which matches what is expected for the site. The amount of litter at KA-17 is 32 to 48% with an average of 40% and the amount that this site should have is 40% which is slightly more than what is expected for the site. The amount of litter at SMU-12 and SMU-89 is moderately more than what is expected due to the increase in

cheatgrass within these sites. Also the amount of fine litter from perennial grass has increased the amount of litter in SMU-12, KA-15 and KA-17.

General assessment of this pasture:

All sites show sufficient vegetative cover, some biological soil crust, some surface rock cover, and litter to protect the soil surface from excessive water and wind erosion. Soil stability test show that some areas have reduce soil surface resistance to erosion, but on these areas erosion have not exceed what would be expected for the natural potential within these sites. Some of the pasture landscape is naturally erosive due to abiotic factors such as the existing geology and soils types, as well as geomorphological characteristics. There are some changes in infiltration due to the increase in the amount of cheatgrass within all the sites.

Majority of the water is leaving these sites as expected for these soil types and characteristic vegetative communities. There are no major problems with soil erosion within the drainages of the evaluation areas. Majority of the soils are fine sandy loam which during periods of heavy precipitation, water is retained within the pores spaces of the soils evaluated; saturation occurs and remaining water will leave the sites as overland flow. Within the greasewood site (SMU-89) which is approximately 160 acres has some soil moisture loss through surface evaporation due to an increase in bare ground. Soil moisture may be depleted in the top horizons during the spring months due to rapid growth of annual species such as cheatgrass (*Bromus tectorum*) which is common throughout all sites. Overall Sand Flat West Pasture is meeting upland soil item (a).

Sand Flats East Pasture: As documented in the Indicators of Rangeland Health data sheets:

Water flow patterns matches what was expected for SMU-71 and KA-14 the flow patterns are short and stable.

The amount of bare ground at KA-14 and SMU-71 matches what is expected for these sites. SMU-71 has 32 to 34% biological soil crust and 14 to 22% rock cover which is helping to protect the soil from erosion.

There were no indications of excessive wind-scoured and blowouts or depositional areas within these upland sites except for KA-14 site has infrequent and few depositional areas.

The soil stability test was done on all sites, which SMU-71 soil has good resistance to erosion. KA-14 soil has moderate to extreme reduction to resistance to erosion and at the present time the soil is stable, but there is a high potential for erosion if the annual cheatgrass what reduce without increasing the perennial grasses and shrubs. All upland sites visited within this pasture during the field assessments exhibited sufficient cover which includes some biological soil crust, some rock cover, vegetation cover and litter relative to site potential to protect the soil from excess erosion from wind and water.

There is no soil surface loss or degradation within all sites and soil surface is stable.

There has been moderate to extreme reduction infiltration due to the increase in cheatgrass and reduction of perennial plants species within KA-14. SMU-71 infiltration is slightly changed due to the low amount of perennial grasses within this area and there are no cheatgrass present within this site. SMU-71 area overall is slightly below what is expected for the site. There are no sign of accelerated erosion at any of these sites.

The soil pits show no compaction layers within all these sites.

Litter movement with KA-14 and SMU-71 is staying in place and fairly uniform.

Cheatgrass is common throughout KA-14 and has increased the amount of fine litter for this site to 68 to 80% which is rated as moderate to extreme. The amount of litter at SMU-71 is 10 to 14% which is slightly below what is expected for this site which is 15 to 20% and there is no cheatgrass present within this site.

General assessment of this pasture:

All sites show sufficient vegetative cover, some biological soil crust, some surface rock cover, and litter to protect the soil surface from excessive water and wind erosion. Majority of this pasture is meeting this item a: upland soils. KA-14 is showing some changes in litter and vegetation, however this site make up approximately 180 acres which is a small portion of this pasture. Soil stability test show that that KA-14 soil has moderate to extreme reduction to resistance to erosion, but at the present time erosion have not exceed what would be expected for the natural potential within this site. Some of the pasture landscape is naturally erosive due to abiotic factors such as the existing geology and soils types, as well as geomorphological characteristics. There is some changes in infiltration within KA-14 is due to the increase in the amount of cheatgrass.

Majority of the water is leaving these sites as expected for these soil types and characteristic vegetative communities. There are no major problems with soil erosion within the drainages of the evaluation areas. Majority of the soils are fine sandy loam which during periods of heavy precipitation, water is retained within the pores spaces of the soils evaluated; saturation occurs and remaining water will leave the sites as overland flow. Approximately 180 acres of this pasture has an increase in fine litter due to the increase in cheatgrass within KA-14. Soil moisture may be depleted in the top horizons during the spring months due to rapid growth of annual species such as cheatgrass (*Bromus tectorum*) which is common within KA-14. Overall Sand Flat East Pasture is meeting upland soil item (a).

Knowles Pasture: As documented in the Indicators of Rangeland Health data sheets:

Water flow patterns within KA-27 are short and stable. Within KA-16, SMU-89 and SMU-12 there are some minor erosion that is occurring and flow patterns are stable due to some rock cover, litter, biological soil crust (KA-16) and vegetation.

The amount of bare ground at KA-27 and SMU-12 matches what is expected for these sites. The amount of bare ground (34 to 38%) is slight to moderate more than what is expected within

SMU-89 which should be 15 to 25% bare ground. KA-16 the percent bare ground is slight to moderate more than what is expected for this soil type which should be 25 to 35% bare ground. At the present time KA-16 site has 40 to 46% bare ground which is an increase in bare ground. There is also biological soil crust (6 to 14%) and rock (10 to 16%) which is helping to protect the soil. The soil is stable with only minor erosion. Generally, soil moisture loss through surface evaporation can be directly correlated to the percentage of bare ground. Therefore, direct soil moisture loss at the soil surface has not increased at the two upland sites (KA-27 and SMU-12) due to annual inputs of herbaceous vegetative cover, biological soil crust 36 to 46% (KA-27) and 6 to 12% (KA-27) of rock cover and litter in relation to ecological potential; however KA-16 and SMU-89 has an increase in bare ground and has some soil moisture loss through surface evaporation within these sites.

There were no indication of excessive wind-scoured, blowouts or depositional areas within KA-16 and KA-27. SMU-89 there is no depositional or blowout areas but there are a few small infrequent wind scoured areas.

The soil stability test was done on all sites, which KA-27 soil has good resistance to erosion and has 36 to 46% biological soil crusts. Within KA-16 and SMU-89 is slightly below what is expected for the soil surface resistance to erosion and soils are stable. KA-16 has 6 to 14% biological soil crust which is helping to prevent soil erosion at this site. However, SMU-12 has a rating of 2.6 which is moderately less soil surface is resistance to erosion. All upland sites visited within this pasture during the field assessments exhibited sufficient cover which includes some biological soil crust, some rock cover, vegetation cover and litter relative to site potential to protect the soil from excess erosion from wind and water.

There is no soil surface loss or degradation within all the sites and soils surface is stable.

All four upland sites has slight to moderate reduction in infiltration. Within SMU-12 and SMU-89 the reduction of infiltration is due to the amount of cheatgrass within these upland sites. KA-16 and KA-27 has a slight change in infiltration due to the reduce amount of perennial grasses and there is no cheatgrass within these upland sites. There are no sign of accelerated erosion at any of these sites.

KA-16, KA-27 and SMU-12 soil pits show no compaction layer. SMU-89 soil pit shows a slight salt layer which is affecting the roots, but the roots are still evident throughout all the soil layers.

Litter movement within KA-16, KA-27 and SMU-12 are staying in place and fairly uniform. SMU-89 fine litter is moving slightly within this site.

Cheatgrass is common throughout SMU-12, which is increasing the amount of fine litter for this site to 24 to 26% and the amount of litter should be 5 to 10% within this site or litter can increase up to 20% after leaf drop. SMU-12 has an increase in litter due to cheatgrass and perennial grasses. Cheatgrass is scattered throughout SMU-89 and has increase the amount of litter to slight to moderate with 32 to 46% cover cause by fine litter from cheatgrass and perennial grasses. The amount of litter at KA-16 and KA-27 matches what is expected for these sites and there is very little cheatgrass within these upland sites.

General assessment of this pasture:

All sites show sufficient vegetative cover, some biological soil crust, some surface rock cover, and litter to protect the soil surface from excessive water and wind erosion. Soil stability test show that the small area of SMU-12 have reduce soil surface resistance to erosion, but erosion have not exceed what would be expected for the natural potential within this site. Some of the pasture landscape is naturally erosive due to abiotic factors such as the existing geology and soils types, as well as geomorphological characteristics.

There are slight changes in infiltration due to the increase in the amount of cheatgrass within SMU-12 and SMU-89. Majority of the water is leaving these sites as expected for these soil types and characteristic vegetative communities. There are no major problems with soil erosion within the drainages of the evaluation areas. Majority of the soils are fine sandy loam which during periods of heavy precipitation, water is retained within the pores spaces of the soils evaluated; saturation occurs and remaining water will leave the sites as overland flow. Soil moisture may be depleted in the top horizons during the spring months due to rapid growth of annual species such as cheatgrass (*Bromus tectorum*) which is common throughout SMU-12. Knowles Pasture is meeting upland soil item (a).

Cow Creek Pasture: As documented in the Indicators of Rangeland Health data sheets:

Water flow patterns matches what was expected for KA-7 with few short and stable flow patterns. SMU-47 is rated as moderate with an increase in flow patterns on the slopes and most of this site is stable with some erosion occurring.

The amount of bare ground is higher at both sites than what is expected for these sites. KA-7 has 36 to 44% bare ground and has slightly more bare ground. At SMU-47 has 44 to 60% bare ground which is 20% higher than what is expected for this site. Both sites have very little cheatgrass present. Generally, soil moisture loss through surface evaporation can be directly correlated to the percentage of bare ground. Therefore, direct soil moisture loss at the soil surface has increase with more bare ground and has some soil moisture loss through surface evaporation within these sites.

There were no indications of excessive wind-scourd and blowouts or depositional areas within these upland sites.

Litter movement within KA-7 and SMU-47 is the fine litter that is moving slightly more than what is expected for the sites.

The soil stability test was done on all sites and is showing these soils are below what is expected for these areas. The soils at these sites are protected by the present of litter, vegetation and some biological soil crust. At the present time the soil surfaces are stable.

There is no soil surface loss or degradation within KA-7 and soil surface is stable. Within SMU-47 there is some soil loss in the interspaces of the vegetation.

The infiltration and vegetation matches what is expected for these two upland sites.

KA-7 and SMU-47 soil pits show no compaction layers.

Amount of litter at KA-7 upland site matches what is expected for this site with 28 to 30% cover. The litter cover is 22% within SMU-47 and should only be 8 to 10% cover which is slight to moderate more litter amount than what is expected for this site. The perennial grasses and leafs from the shrubs are producing more litter within SMU-47. Both upland sites have very little cheatgrass throughout the areas.

General assessment of this pasture:

All sites show sufficient vegetative cover and litter to protect the soil surface from excessive water and wind erosion. Majority of this pasture is showing an increase in bare ground. There may have be some soil moisture loss through surface evaporation within this pasture due to the amount of bare ground. Soil stability test show that both sites have fair amount of resistance to soil erosion. At the present time there is slight erosion that is occurring on the steeper slopes within SMU-47, but erosion have not exceed what would be expected for the natural potential within this site. Some of the pasture landscape is naturally erosive due to abiotic factors such as the existing geology and soils types, as well as geomorphological characteristics. Infiltration matches what is expected for these sites.

Majority of the water is leaving these sites as expected for these soil types and characteristic vegetative communities. There are no major problems with soil erosion within the drainages of the evaluation areas. Majority of the soils are fine sandy loam which during periods of heavy precipitation, water is retained within the pores spaces of the soils evaluated; saturation occurs and remaining water will leave the sites as overland flow. Cow Creek Pasture is meeting upland soil item (a).

Sand Blast Pasture: As documented in the Indicators of Rangeland Health data sheets:

There are very few water flow patterns and they are very stable within KA-39.

The amount of bare ground for KA-7 is 28 to 46% or average of 37% which matches what is expected for this upland site. This site has some cheatgrass within the disturbed areas. Generally, soil moisture loss through surface evaporation can be directly correlated to the percentage of bare ground. This site has no soil moisture loss through surface evaporation.

There were no indications of excessive wind-scoured and blowouts or depositional areas within this upland site.

There is no litter movement within KA-39 and the litter is staying in place.

The soil stability test was done on this site and is showing this soil has good resistance to erosion but it is slightly below what is expected for this site.

There is no soil surface loss or degradation within KA-39 and soil surface is stable.

The infiltration for this site is rated as slight to moderate due to some cheatgrass and the reduction in shrubs species.

KA-39 soil pit shows no compaction layers.

The amount of litter within KA-39 upland site matches what is expected for this site with 38 to 50% cover or average of 44% litter cover. This site has some cheatgrass in the disturbed areas.

General assessment of this pasture:

This pasture overall has sufficient vegetative cover and litter to protect the soil surface from excessive water and wind erosion. Soil stability test show that this site has good resistance to soil erosion. Erosion does not exceed what would be expected for the natural potential of this area. Some of the pasture landscape is naturally erosive due to abiotic factors such as the existing geology and soils types, as well as geomorphological characteristics. Infiltration is rated as slight to moderate above what is expected for this site due to some cheatgrass and a reduction of shrubs.

Majority of the water is leaving these sites as expected for this soil type and characteristic vegetative communities. There are no major problems with soil erosion within the drainages of the evaluation areas. Majority of the soils are fine sandy loam which during periods of heavy precipitation, water is retained within the pores spaces of the soils evaluated; saturation occurs and remaining water will leave the sites as overland flow. Sand Blast Pasture is meeting upland soil item (a).

Buckhorn Pasture: As documented in the Indicators of Rangeland Health data sheets:

There are no water flow patterns within KA-21. KA-24 has some water flow patterns with minor erosion occurring.

Bare ground at these two key areas (KA-21 and KA-24) is slightly less than what is expected for these sites. Within KA-24 there is 38 to 50% biological soil crust and 28% rock cover to protect the soil surface.

These key areas (KA-21 and KA-24) show no wind scoured and blowouts or depositional areas.

Litter movement within these key areas is staying in place.

The soil stability test was done on all sites. KA-21 matches what is expected for the site and is very stable. KA-24 exhibits slightly less soil stability and at the present time the soil surface is stable. KA-21 has 38 to 50% biological soil crust throughout the area and 28% rock cover. These upland sites visited within this pasture during the field assessments exhibited sufficient cover which includes some biological soil crust, some rock cover, vegetation cover and litter

relative to site potential to protect the soil from excess erosion from wind and water. Both sites are very stable with none to minor erosion occurring at the present time. There are no major problems with soil erosion within the drainages of these evaluation areas.

There is no soil surface loss or degradation within these key areas and soil surface is stable.

The infiltration for these two sites matches what is expected for these upland sites. The vegetation closely matches what is expected for these sites. There is very little cheatgrass within KA-21.

KA-21 and KA-24 soil pits show no compaction layer.

The amount of litter at KA-21 upland sites matches what is expected for this area with 10 to 14% litter cover. Within KA-24 upland site has 28 to 36% litter cover which is slight to moderate more litter than what is expected, but this is due to cheatgrass litter, perennial grasses litter and leafs from the sagebrush are producing more litter within this site. Cheatgrass is scatter throughout KA-24 and very little cheatgrass is present in KA-21. All sites show uniform distribution of litter to protect the soil surface from erosion.

General assessment of this pasture:

All sites show sufficient vegetative cover, some biological soil crust, some surface rock cover, and litter to protect the soil surface from excessive water and wind erosion. The amount of a bare ground matches what is expected for these sites. Generally, soil moisture loss through surface evaporation can be directly correlated to the percentage of bare ground. Therefore, direct soil moisture loss at the soil surface has not increased at these upland sites due to annual input of herbaceous vegetative cover, amount of rock cover, biological soil crust and litter in relation to ecological potential; however, soil moisture may be depleted in the top horizons during the spring months due to rapid growth of annual species, such as cheatgrass (*Bromus tectorum*) that is scattered throughout KA-24. Soil stability test show these sites matches what is expected for the area. Some of the pasture landscape is naturally erosive due to abiotic factors such as the existing geology and soils types, as well as geomorphological characteristics.

Majority of the water is leaving these sites as expected for these soil types and characteristic vegetative communities. There are no major problems with soil erosion within the drainages of the evaluation areas. Majority of the soils are fine sandy loam which during periods of heavy precipitation, water is retained within the pores spaces of the soils evaluated; saturation occurs and remaining water will leave the sites as overland flow. Buckhorn Pasture is meeting upland soil item (a).

Hotel Mesa Pasture: As documented in the Indicators of Rangeland Health data sheets:

Water flow patterns on all key areas (KA-8, KA-13 and SMU-98) are very short and stable flow patterns.

Bare ground at these three key areas matches what is expected for these sites. KA-8 has 8 to 10% biological soil crust, KA-13 has 22 to 24% biological soil crust and SMU-98 has 36 to 42% surface rock which will protect these areas from soil erosion.

These key areas show no wind scoured and blowouts or depositional areas.

Litter movement within these key areas are staying in place and fairly uniform.

The soil stability test was done on all sites showing the soil has good resistance to erosion. KA-8 and SMU-98 matches what is expected for these sites. KA-13 is slight to moderate below what is expected for the area and at the present time the soil surface is stable. KA-13 has 22 to 24% biological soil crust within this site which helps protect the soil from erosion. These upland sites visited within this pasture during the field assessments exhibited sufficient cover which includes biological soil crust, rock cover, vegetation cover and litter relative to site potential to protect the soil from excess erosion from wind and water.

There is no soil surface loss or degradation within these key areas and soil surface is stable.

The infiltration for SMU-98 sites matches what is expected for this upland site. The KA-8 shows a slight to moderate change in infiltration due to the change in perennial plants within this area. There has been some change in infiltration due to the increase in cheatgrass within KA-13. There is no sign of accelerated erosion at any of these sites.

All the sites soil pits show no compaction layer.

Cheatgrass is common throughout KA-13 and there is an increase in perennial grasses which is producing more fine litter, which has caused a slight to moderate increasing in the amount of fine litter for the site to 34 to 46%. There is some cheatgrass within KA-8 and has caused a slight to moderate increasing in the amount of fine litter for the site to 14 to 42% or average of 28%. The amount of litter at SMU-98 is 20% which matches what is expected for this site and cheatgrass is not present. All sites show uniform distribution of litter to protect the soil surface from erosion.

General assessment of this pasture:

All sites show sufficient vegetative cover, biological soil crust, surface rock cover, and litter to protect the soil surface from excessive water and wind erosion. The amount of bare ground matches what is expected for these sites. Generally, soil moisture loss through surface evaporation can be directly correlated to the percentage of bare ground. Therefore, direct soil moisture loss at the soil surface has not increased at these upland sites due to annual input of herbaceous vegetative cover, amount of rock cover, biological soil crust and litter in relation to ecological potential; however, soil moisture may be depleted in the top horizons during the spring months due to rapid growth of annual species, such as cheatgrass (*Bromus tectorum*) that is common throughout KA-13. Soil stability test show these sites matches what is expected for the area and has good resistance to erosion. There are major problems with soil erosion within the drainages of the evaluation areas. Erosion does not exceed what would be expected for the

natural potential of these sites. Some of the pasture landscape is naturally erosive due to abiotic factors such as the existing geology and soils types, as well as geomorphological characteristics.

Majority of the water is leaving these sites as expected for these soil types and characteristic vegetative communities. Majority of the soils are fine sandy loam which during periods of heavy precipitation, water is retained within the pores spaces of the soils evaluated; saturation occurs and remaining water will leave the sites as overland flow. The a biggest change in infiltration is moisture may be depleted in the top horizons during the spring months due to rapid growth of annual species such as cheatgrass (*Bromus tectorum*) which is common throughout KA-13. Hotel Mesa Pasture is meeting upland soil item (a).

b) The absence of indicators of excessive erosion such as rills, soil pedestals, and actively eroding gullies.

None of the sites within the Sand Flats Allotment showed signs of excessive erosion. There were no rills present at any of the sites within this allotment. The vegetation within this allotment was not showing signs of present or past pedestalling or terracettes except for Knowles Pasture SMU-12, Hotel Mesa Pasture KA-8 and KA-13 are showing some active pedestalling and old pedestalling present and is rated as slight to moderate. Within Sand Flats West Pasture KA-15 shows no pedestalling on flat ground but on the slopes there are some active pedestals and is rated as slight to moderate. Sand Flats Allotment is meeting upland soil item (b).

c) The appropriate amount, type, and distribution of vegetation reflecting the presence of (1) the desired plant community (DPC), where identified in a land use plan, conforming to these Standards or (2) where the DPC is not identified, a plant community that equally sustains the desired level of productivity and properly functioning ecological conditions.

Sand Flats West Pasture: As documented in the Indicators of Rangeland Health data sheets:

SMU-12 upland site has the desired plant community and is functioning to desired level of productivity and ecological condition.

KA-15 upland site has some loss of dominant grass group due to the pass drought in 2009 and is slightly below what is expected for the site. However cheatgrass has increased after the drought and is competing with the perennial grasses on this site. This site is rated as slight to moderate. Even though this site has some reduction in grasses, it still has the ability to allow for functionality of the soils. This area has fair amount of plant diversity. This site is close to the desired plant community.

KA-17 upland site there has been some reduction in the dominant grasses and is below what is expected for this site. The shrubs and forbs matches what is expected for this site and is rated as moderate. Even though this site has some reduction in grasses, it still has the ability to allow for functionality of the soils.

Within SMU-89 the shrubs have moved from dominant species to sub-dominant species and cheatgrass has become the dominant species on site. The amount of perennial grasses is below what is expected for this site and is a sub-dominant component of this community. This site has poor diversity of perennial plants species. This area represents approximately 160 acres of this pasture. This site is not meeting the appropriate amount and type for this community.

All the sites have cheatgrass that is common throughout the sites and there are no noxious weeds observed.

Overall Sand Flats West Pasture is meeting upland soil item (c) except for SMU-89 which represents approximately 160 acres of the pasture.

Sand Flats East Pasture: As documented in the Indicators of Rangeland Health data sheets:

SMU-71 upland site the dominant shrub component is slightly below what is expected for this site; however, the subdominant grasses within this ecological site description should only have 9 to 11% cover of grasses which is a minor component. This is a blackbrush community which has poor diversity and some perennial grasses. This site has the ability to allow for functionality of the soil. This upland site makes up the majority of the acres within this pasture. This site is rated as slight to moderate from the expected desired plant community.

Within KA-14 upland site there has been a major loss of perennial grasses due to the pass drought and major reduction in shrubs due to an insect infestation with the Fourwinged saltbush. The cheatgrass is the dominant species which has replaced the dominant perennial grasses within this site. The perennial grasses and shrub are sub-dominating species within this community. This site has poor diversity of perennial plant species. This area represents approximately 180 acres of this pasture.

No noxious weeds were observed at these sites.

Majority of this pasture has no cheatgrass except for KA-14 has cheatgrass that is common throughout the site which amounts to 180 acres within this pasture.

Overall Sand Flats East Pasture is meeting upland soil item (c) except for KA-14 which represents approximately 180 acres of the pasture is not meeting.

Knowles Pasture: As documented in the Indicators of Rangeland Health data sheets:

SMU-12 upland site visited has the desired plant community which is functioning close to the desired level of productivity and ecological condition. This area has good plant diversity.

Within KA-16 and KA-27 upland sites the dominant shrub component matches what is expected for these sites; however, the subdominant grasses within this ecological site description should only have 9 to 11% cover of grasses which is a minor component. This is a blackbrush community has good plant species diversity and some perennial grasses. These upland sites

make up the majority of the acres within this pasture. These sites still has the ability to allow for functionality of the soils.

SMU-89 upland site the shrub component has moved from dominant species to sub-dominant species. Cheatgrass and perennial grass has become the dominant species on site. This site has good plant species diversity throughout the area. This site has the ability to allow for functionality of the soils.

No noxious weeds were observed within all sites.

Within KA-27 there is no cheatgrass present. KA-16 there is a few cheatgrass plants and tumbleweed plants along the county road. Within SMU-89 cheatgrass is scatter throughout the area. Within SMU-12 showed a moderately to extreme change from what is expected at this site with cheatgrass being common throughout the area.

Knowles Pasture is meeting upland soil item (c).

Cow Creek Pasture: As documented in the Indicators of Rangeland Health data sheets:

All the upland sites visited has the desired plant communities and are functioning to the desired level of productivity and ecological condition.

All sites have no noxious weeds were observed.

Within KA-7 and SMU-47 there are a few cheatgrass plants within disturbed areas.

Cow Creek Pasture is meeting upland soil item (c).

Sand Blast Pasture: As documented in the Indicators of Rangeland Health data sheets:

Within KA-39 there is a slight reduction of the sub-dominant shrub group species within this site. Forbs and grasses matches what is expected for the site. Perennial grasses are the dominant group for this site. There is fair amount of diversity within the perennial plant species. This upland site visited has the desired plant communities which are functioning to the desired level of productivity and ecological condition.

There were no noxious weeds observed and cheatgrass is found only in disturbed areas.

Sand Blast Pasture is meeting upland soil item (c).

Buckhorn Pasture: As documented in the Indicators of Rangeland Health data sheets:

KA-24 upland site visited has the desired plant communities and are functioning to the desired level of productivity and ecological condition.

KA-21 upland site is dominant shrub component matches what is expected for this site; however, the subdominant grasses with this ecological site description should only have 9 to 11% cover of grasses which is a minor component. This is a blackbrush community has poor plant diversity and there is some perennial grasses. This site has the ability to allow for functionality of the soils.

No noxious weeds were observed within these sites.

Within KA-21 there is some cheatgrass under the juniper trees only. Within KA-24 the cheatgrass is scatter throughout the site and juniper trees are scattered within the sagebrush community.

Buckhorn Pasture is meeting upland soil item (c).

Hotel Mesa Pasture: As documented in the Indicators of Rangeland Health data sheets:

SMU-98 upland site visited has the desired plant community which is functioning close to the desired level of productivity and ecological condition. This area has good plant diversity.

Within KA-8 upland site the co-dominant shrubs and grasses are below what is expected for the site and the shrubs have become sub-dominant plant group within this site. The amount of forbs matches what is expected for the site. There is good diversity of perennial plant species within this site and is rated as slight to moderate. This site still has the ability to allow for functionality of the soils.

KA-13 the dominant shrubs component has been reduced to a sub-dominant group. The amount of sub-dominant grasses has increase to become the dominant species within this community. Cheatgrass has increased to a co-dominant component of this blackbrush community. There is good diversity of perennial plant species within this site. This site has the ability to allow for functionality of the soils.

No noxious weeds were observed within these sites.

Within SMU-98 there is no cheatgrass and KA-8 has cheatgrass along the county road and in disturbed areas. Within KA-13 showed a moderately to extreme change from what is expected for this site with cheatgrass being common throughout the area.

Hotel Mesa Pasture is meeting upland soil item (c).

Standard #2 Riparian and Wetland areas: Riparian and wetland areas are in properly functioning condition. Stream channel morphology and functions are appropriate to soil type, climate and landform.

Riparian areas were assessed using the “Riparian Area Management (TR 1737-15 1998 and TR1727-16 1999 revised in 2003). A User Guide to Assessing Proper Functioning Condition

(PFC) and the Supporting Science for Lotic and Lentic Areas. PFC assesses three separate categories of riparian areas, hydrology, vegetation, and erosion/deposition.

An interdisciplinary team visited 15 riparian areas within the Sand Flats Allotment.

Table 3: Riparian and Wetland areas

Riparian areas					
Name	Size	Location	Pasture	Properly Function Condition	Type of Riparian
Cane Springs	6 acres	T.21S.,R.24E., Sec. 36	Sand Flats West Pasture	PFC	Perennial 6 acres
Cane Creek	¼ mile	T.21S.,R.24E., Sec. 35	Sand Flats West Pasture	PFC & upward trend	Intermittent ¼ mile
Coates Creek	13 miles	T.22S.,R.24E., Sec. 11 & 12 T.22S.,R.25E., Sec. 4,5,7 & 8 T.21S.,R.25E., Sec. 26,33 to 35	Sand Flats West Pasture Cow Creek Pasture Sand Flats East Pasture	PFC 1 mile FAR by exclosures ½ mile & PFC 4½ miles PFC 7 miles	Perennial 8 miles and Intermittent 5 miles
Ryan Creek	2 miles	T.22S.,R.25E., Sec 8,16,17 & 21	Sand Blast Pasture & Cow Creek Pasture	PFC	Intermittent ¾ miles Perennial 1¼ miles
Lower Renegade Creek	¾ mile	T.22S.,R.25E., Sec. 7 & 8	Sand Flat East Pasture	PFC	Intermittent
Dry Gulch Seeps	>1/4 mile	T.21S.,R.25E., Sec. 33	Sand Flat East Pasture	PFC	Intermittent
Buckhorn Draw Seep	>1/4 mile	T.22S.,R.25E., Sec. 33 SWNW	Buckhorn Pasture	PFC	Intermittent
Buckhorn Spring	¼ mile	T.22S.,R.25E., Sec. 33 SE	Buckhorn Pasture	PFC	Intermittent
Buckhorn Draw Seep (by old cabin site)	>1/4 mile	T.22S.,R.25E., Sec.31	Buckhorn Pasture	FAR	Intermittent
Cow Creek	2 miles	T.22S.,R.24E., Sec. 13 T.22S.,R.25E., Sec. 18	Cow Creek Pasture	PFC	Intermittent
Two No Name Seeps	>1/4 mile	T.21S.,R.25E., Sec. 26	Sand Flat East Pasture	PFC	Intermittent
Sand Flats Seep	>1/4 mile	T.22S.,R.25E., Sec. 7	Sand Flat East Pasture	PFC	Intermittent
Dolores River Oxbow	5 acres	T.23S.,R.24E., Sec. 16	Hotel Mesa Pasture	PFC	Perennial
Dolores River	3 miles	T.23S.,R.24E., Sec. 9 to 12	Hotel Mesa Pasture	PFC & Upward trend	Perennial
Colorado River	10 miles	T.21S.,R.25E., Sec. 17, 19 & 20 T.21S.,R.24E., Sec. 14, 23, 24, 26 & 35 T.22S.,R.24E., Sec. 3, 10, 11, 15, 21 & 22	Hotel Mesa Pasture Cow Creek Pasture Sand Flats West Pasture & Knowles Pasture	PFC & Upward trend	Perennial

The following riparian areas are perennial water for the Sand Flats Allotment: Colorado River, Dolores River, Dolores River Oxbow, and Cane Spring, portions of Coates Creek and portion of Ryan Creek.

Sand Flats Allotment is located primarily in the Westwater Creek-Colorado River Watershed and Coates Creek Watershed.

The Sand Flats Allotment is meeting the Riparian Standards. Proper Functioning condition data was used to make determination.

- a) **Stream bank vegetation consisting of or showing a trend toward, species with root masses capable of withstanding high stream flow events. Vegetative cover adequate to protect stream banks and dissipate stream flow energy associated with high-water flows, protect against accelerated erosion, capture sediment, and provide for groundwater recharge.**

There are approximately 32 miles of lotic riparian system (streams) within the allotment and approximately 11½ acres of Lentic riparian system (wetlands). Majority of the lotic riparian system or approximately 31¼ miles are Properly Functioning Condition (PFC) and

approximately 11½ acres of the lentic riparian system is at PFC. There are two small areas that are Functioning-at-Risk which is > ¼ mile at the Buckhorn Draw Seep (by the old cabin site) and only ½ mile of Coates Creek and is within the livestock exclosures upstream of the private land show a lacking adequate riparian vegetation cover to protect the banks and dissipate energy during high flows. These exclosures are to keep livestock out. Buckhorn Draw Seep and Coates Creek has riparian community which has plants with good root masses capable of withstanding high stream flow events.

- b) Vegetation reflecting: Desired Plant Community (DPC), maintenance of riparian and wetland soil moisture characteristics, diverse age structure and composition, high vigor, large woody debris when site potential allows, and providing food, cover, and other habitat needs for dependent animal species.**

There are approximately 32 miles of lotic riparian system (streams) within the allotment and approximately 11½ acres of lentic riparian system (wetlands). Majority of the lotic riparian system or approximately 31¼ miles are Properly Functioning Condition (PFC) and approximately 11½ acres of the lentic riparian system is at PFC. There are two small areas that are Functioning-at-Risk which is > ¼ mile at the Buckhorn Draw Seep (by the old cabin site) and only ½ mile of Coates Creek and is within the livestock exclosures upstream of the private land. These exclosures are to keep livestock out.

The Buckhorn Draw Seep (by the old cabin site) is an intermittent stream that dries up during majority of the year. The Buckhorn Draw Seep maybe lacking adequate riparian vegetation cover to protect the banks and dissipate energy during high flows this may be due to the lack of water throughout majority of the year to support good riparian vegetation. This seep is usually dry from May thru November each year. This riparian area is not widening or it has not achieved potential. This area has diverse age-class of vegetation and diverse composition of riparian vegetation (for maintenance/recovery). During the growing season the riparian vegetation has recruitment that helps maintain the soils moisture characteristic. The plants have good vigor except for tamarix which has a tamarisk leaf beetle which the State Lands introduced to the Colorado River drainage.

The ½ mile of Coates Creek is showing a lack of diverse age-class distribution of riparian vegetation allowing recruitment for maintenance and recovery. This site is an intermittent stream which is lacking young plants which may be due to the lack of water to support riparian vegetation. Coates Creek water is used for irrigation upstream in Colorado which dries up the lower portion of Coates Creek from May thru November. These include two riparian exclosures and the conditions inside the exclosures are the same as outside the exclosures. Majority of the plants are Facultative Species which are species that are equally likely to occur in riparian areas which includes Cottonwood trees, tamarisk and salt grass. These facultative species are found within an intermittent system. The upland plants are starting to grow within the riparian zone which may be due to the lack of water during 7 months of the year.

- c) Revegetating point bars; lateral stream movement associated with natural sinuosity; channel width, depth, pool frequency and roughness appropriate to landscape position.**

There are approximately 32 miles of lotic riparian system (streams) within the allotment and approximately 11½ acres of lentic riparian system (wetlands). Majority of the lotic riparian system or approximately 31¼ miles are Properly Functioning Condition (PFC) and approximately 11½ acres of the lentic riparian system is at PFC. There are two small areas that are Functioning-at-Risk which is > ¼ mile at the Buckhorn Draw Seep (by the old cabin site) and only ½ mile of Coates Creek and is within the livestock exclosures upstream of the private land. These exclosures are to keep livestock out.

Buckhorn Draw Seep is a very small intermittent stream and there is a lack of any point bars within this seep area. Floodplain and channel characteristic are adequate to dissipate energy. Lateral stream movement is associated with natural sinuosity. The system is vertically stable, but there is one small area of down cutting. The stream appears to be in balance with water and sediment being supplied by the watershed.

Coates Creek ½ mile section is an intermittent stream system which has no point bars within this segment. The flood plain and channel characteristic are adequate to dissipate energy. Lateral stream movement is associated with natural sinuosity and is vertically stable. Coates Creek is in balance with water and sediment being supplied by the watershed.

d) Active floodplain

There are approximately 32 miles of lotic riparian system (streams) within the allotment and approximately 11½ acres of lentic riparian system (wetlands). Majority of the lotic riparian system or approximately 31¼ miles are Properly Functioning Condition (PFC) and approximately 11½ acres of the lentic riparian system is at PFC. There are two small areas that are Functioning-at-Risk which is > ¼ mile at the Buckhorn Draw Seep (by the old cabin site) and only ½ mile of Coates Creek and is within the livestock exclosures upstream of the private land. These exclosures are to keep livestock out.

Buckhorn Draw Seep floodplain above bank full is inundated in relatively frequent events. The riparian area has not achieved potential extent. There is upland vegetation becoming established within the riparian area. This area is an intermittent stream which is dry during most of the year mainly during late spring, summer, and fall and sometime in the winter season.

Coates Creek ½ mile section has not achieved its potential extent. This may be due to the dewatering of the creek for irrigation of croplands upstream in Colorado which makes this portion of the stream intermittent when irrigation starts occurring in the spring months by late spring this section has dry up and will stay dry until late fall. There are rocks within the channel and small overflow channels to dissipate the energy.

Standard #3 Desired Species: Desired species, including native, threatened, endangered, and special-status species, are maintained at a level appropriate for the site and species involved.

Indicators of Rangeland Health, long term trend monitoring data, and report from Wildlife Biologist were used to make determination:

Indicators of Rangeland Health:

- 12) Functional/structural groups
- 13) Plant mortality and decadence
- 15) Annual production
- 16) Invasive/noxious weeds
- 17) Reproductive capability of perennial plants

a) Frequency, diversity, density, age classes, and productivity of desired native species necessary to ensure reproductive capability and survival.

Sand Flats West Pasture: As documented in the Indicators of Rangeland Health data sheets:

At SMU-12 upland site has the desired plant communities which are functioning to desired level of productivity and ecological condition. KA-15 upland site has some loss of dominant grass group due to the pass drought in 2009 and is slightly below what is expected for the site. This is rated as slight to moderate. Even though this site has some reduction in grasses, it still has the ability to allow for functionality of the plant communities. This area has fair amount of plant diversity. This site is close to the desired plant community. KA-17 upland site there has been some reduction in the dominant grasses and is below what is expected for this site. The shrubs and forbs matches what is expected for this site and is rated as moderate. Even though this site has some reduction in grasses, it still has the ability to allow for functionality of the plant community. SMU-89 the shrubs have moved from dominant species to sub-dominant species and cheatgrass has become the dominant species on site. The amount of perennial grasses is below what is expected for this site and is a sub-dominant component of this community. This site has poor diversity of perennial plant species. This area represents approximately 160 acres of this pasture.

Plant mortality and decadence matches what is expected for these sites (SMU-12, KA-15 and SMU-89). There is very little mortality within these sites, however at KA-17 there is some mortality of the shadscale saltbush due to an insect infestation during the 1990's.

Annual production on KA-15, KA-17 and SMU-12 matches what is expected for these sites, but SMU-89 site is slightly below what is expected for the site due to the reduction of the shrubs.

All four sites have cheatgrass that is common throughout the sites and there was no noxious weeds observed. Within KA-15 cheatgrass has increased after the drought and is competing with the perennial grass on this site.

Reproductive capability of perennial plants and young perennial plants was observed throughout all the four sites.

Majority of the Sand Flats West Pasture is meeting desired species item (a). Except for 160 acres within the SMU-89 area is not meeting this item also KA-14 which is located in Sand Flats East Pasture represent 140 acres within Sand Flats West Pasture is not meeting this item.

Sand Flats East Pasture: As documented in the Indicators of Rangeland Health data sheets:

SMU-71 upland site the dominant shrub component is slightly below what is expected for this site; however, the subdominant grasses with this ecological site description should only have 9 to 11% cover of grasses which is a minor component. This is a blackbrush community has poor plant diversity and low amount of perennial grasses. This site has the ability to allow for functionality of this plant community. This upland site makes up the majority of the acres within this pasture. This site is rated as slight to moderate from the expected desired plant community. Within KA-14 upland site there has been a major loss of perennial grasses due to the past drought and major reduction in shrubs are due to an insect infestation with the Fourwinged saltbush. The cheatgrass is the dominant species which has replaced the dominant perennial grasses within this site. The perennial grasses and shrub are sub-dominating species within this community. This site has poor diversity of perennial plant species. This area represents approximately 180 acres of this pasture.

Plant mortality and decadence matches what is expected for SMU-71 sites. KA-14 there is some mortality within the Fourwinged saltbush and the perennial grasses.

Annual production on SMU-71 matches what is expected for this site, but KA-14 site has been reduced to 50% of what is expected for this site due to the reduction of the shrubs and grasses.

KA-14 site have cheatgrass that is common throughout the site and SMU-71 have no cheatgrass present. There were no noxious weeds observed at any of these sites.

SMU-71 majority of the vegetation is capable of producing seed and reproductive capability matches what is expected for this site, except for the perennial grasses are lacking which have reduce the capability for grasses to reproduce. However the grasses are a very minor component of this blackbrush community and the shrubs are the major species within this site. KA-14 capability of reproduction of shrubs and grasses is reduced. There is reproduction that is occurring with young perennial grasses and Fourwinged saltbush plants.

Majority of the Sand Flats East Pasture is meeting desired species item (a). Except for 180 acres within the KA-14 area is not meeting this item.

Knowles Pasture: As documented in the Indicators of Rangeland Health data sheets:

At SMU-12 upland site visited has the desired plant community which is functioning close to the desired level of productivity and ecological condition. This area has good plant diversity. KA-16 and KA-27 upland sites the dominant shrub component matches what is expected for these sites; however, the subdominant grasses within this ecological site description should only have 9 to 11% cover of grasses which is a minor component. These blackbrush communities have some perennial grasses, but these sites have good plant species diversity. These upland sites make up the majority of the acres in this pasture. These sites still has the ability to allow for functionality of the plant communities. SMU-89 upland site the shrub component has moved from dominant species to sub-dominant species and cheatgrass and perennial grasses has become

the dominant species on this site. This site has good plant species diversity throughout the area. This site has the ability to allow for functionality of the plant community.

Plant mortality and decadence matches what is expected for all four sites. There is very little mortality within these sites.

Annual production on SMU-89, SMU-12 and KA-27 matches what is expected for these sites, but KA-16 site has been reduced slightly by the reduction of some perennial grass plants.

KA-27 there is no cheatgrass or noxious weeds and KA-16 there are some cheatgrass and tumbleweed plants along the county road. SMU-89 showed the cheatgrass as being scatter throughout the area and there are no noxious weeds present. SMU-12 showed a moderately to extreme change from what is expected at this site with cheatgrass being common throughout the area and there are no noxious weeds present.

SMU-89 matches what is expected for this site. Both perennial shrubs and grasses were observed producing flowers and seeds. There were young perennial plants observed throughout the site. Within KA-16 and KA-27 majority of the perennial vegetation is capable of producing seed and reproductive capability is what is expected for these sites, except for grasses species has a slight reduction in reproductive capability due to the amount of plants. There are young perennial plants throughout these sites. Within SMU-12 majority of the perennial vegetation is capable of producing seed and reproductive capability is what is expected for this site, except for the Fourwinged saltbush has a slight reduction in reproductive capability due to the amount of plants. There are young Fourwinged saltbush and perennial grass species throughout this site.

Knowles Pasture is meeting desired species item (a).

Cow Creek Pasture: As documented in the Indicators of Rangeland Health data sheets:

KA-7 and SMU-47 upland sites has the desired plant communities which are functioning to desired level of productivity and ecological condition and these sites has good plant diversity.

Plant mortality and decadence matches what is expected for these sites.

Annual production on these two sites matches what is expected for these sites.

Within SMU-47 there is no cheatgrass or noxious weeds. KA-7 there is some cheatgrass within the disturbed areas and no noxious weeds present.

These sites match what is expected for these sites. Both perennial shrubs and grasses were observed producing flowers and seeds. There was young perennial plants were observed throughout these sites.

Cow Creek Pasture is meeting desired species item (a).

Sand Blast Pasture: As documented in the Indicators of Rangeland Health data sheets:

KA-39 there is a slight reduction of the sub-dominant shrub group species within this site. Forbs and grasses matches what is expected for this site. Perennial grasses are the dominant group for this site. There is fair amount of diversity within the perennial plant species. This upland site visited has the desired plant communities which are functioning to the desired level of productivity and ecological condition.

Plant mortality and decadence matches what is expected for this site. There is very little mortality within this area.

Annual production for this site is slightly below what is expected for this site due to the slight reduction of perennial shrubs.

This site has some cheatgrass within disturbed areas and there are no noxious weeds present.

This site matches what is expected for this area. Both perennial shrubs and grasses were observed producing flowers and seeds. There was young perennial plants were observed throughout this site.

Sand Blast Pasture is meeting desired species item (a).

Buckhorn Pasture: As documented in the Indicators of Rangeland Health data sheets:

KA-24 upland site visited has the desired plant community which is functioning to the desired level of productivity and ecological condition. KA-21 upland site the dominant shrub component matches what is expected for this site; however, the subdominant grasses within this ecological site description should only have 9 to 11% cover of grasses which is a minor component. This blackbrush community has poor plant diversity and low amount of perennial grasses. This site still has the ability to allow for functionality of the plant community.

Plant mortality and decadence matches what is expected for KA-21. There is very little mortality within this site. KA-24 there is some decadence and mortality in the sagebrush. Utilization is heavy on the sagebrush due to the high concentration of deer in the area. All the vegetation is capable of reproducing and recruitment is occurring at this site.

Annual production on these key areas matches what is expected for these sites.

Within KA-21 there is some cheatgrass under the juniper trees only and KA-24 has cheatgrass scatter throughout the area. There are no noxious weeds present within these sites.

KA-24 matches what is expected for this site and both perennial shrubs and grasses were observed producing flowers and seeds. There were young perennial plants observed throughout the site. Within KA-21 majority of the perennial vegetation is capable of producing seed and reproductive capability is what is expected for these sites, except for grasses species there is some reproduction within this area. This is a blackbrush community where grasses are a minor component of this plant community and shrubs are the dominant species.

Buckhorn Pasture is meeting desired species item (a).

Hotel Mesa Pasture: As documented in the Indicators of Rangeland Health data sheets:

SMU-98 upland site visited has the desired plant community which is functioning close to the desired level of productivity and ecological condition. This area has good plant diversity. Within KA-8 upland site the co-dominant shrub and grasses are below what is expected for the site and the shrubs have become sub-dominate plant group within this site. The amount of forbs matches what is expected for the site. There is good diversity of perennial plant species within this site and is rated as slight to moderate. This site has the ability to allow for functionality of the plant community. Within KA-13 the dominant shrubs component have been reduced to sub-dominant group. The amount of sub-dominant grasses has increase to become the dominant species within this community. Cheatgrass has increased to a co-dominant component of this blackbrush community. There is good diversity of perennial plant species within this site. This site has the ability to allow for functionality of the plant community.

The plant mortality and decadence matches what is expected for all three sites. There is very little mortality within these sites.

Annual production on these three sites matches what is expected for these areas.

Within SMU-98 there is no cheatgrass and KA-8 there are some cheatgrass along the county road. KA-13 showed a moderately to extreme change from what is expected at this site with cheatgrass being common throughout the area. There are no noxious weeds present within any of these sites.

All three sites match what is expected for these areas. Both perennial shrubs and grasses were observed producing flowers and seeds. There were young perennial plants observed throughout these sites.

Hotel Mesa Pasture is meeting desired species item (a).

b) Habitats connected at a level to enhance species survival.

Within this allotment there are no restrictive barriers that may impede wildlife movement. There are five main county roads that are maintained yearly which includes county road 107, 108, 109, 110 and 111 which have approximately 32 miles. These county roads receive recreational use throughout the year and are used at low speed. There are many non-maintained jeep roads that traverse throughout the allotment but these roads receive low use and low speed. Traffic may alter some wildlife movement but this would be very temporary and short term.

There are approximately 4½ miles of pasture fences and approximately 7 miles of allotment boundary line fences which were installed in the 1970's and 1980's which the barbed wire is less than 38 inches high. Deer and elk pass over these fences with minimal issues and there has been no evidence of any deer or elk mortality along these fence lines. This area is used as winter

range by deer and a few elk so fawns and calves are large enough to jump the fences when they move into this county. There are no migration routes through this area.

The habitats on the allotment are connected at a level to allow for spread of native vegetation and survival of species from site to site.

c) Native species re-occupy habitat niches and voids caused by disturbances unless management objectives call for introduction or maintenance of non-native species.

Sand Flats West Pasture: As documented in the Indicators of Rangeland Health data sheets: SMU-12 upland site shows the desired plant communities with the exception of the non-native cheatgrass being common throughout the area. There are no noxious weeds observed within this site. This site showed that the native plant community has sufficient vigor and reproductive capability for the perennial plant species within this site to reestablish disturbed areas filling the niches and voids left after a disturbance.

KA-15 upland site has some loss of dominant grass group due to the past drought in 2009 and is slightly below what is expected for the site and cheatgrass being common throughout the area. There are no noxious weeds observed within in this site. Even though this site has some reduction in grasses, it still has the ability to allow for functionality of the plant community. This site showed that the native plant community has sufficient vigor and reproductive capability for the perennial plants species within this site to reestablish disturbed areas filling the niches and voids left after a disturbance.

KA-17 upland site has some reduction in the dominant grasses and is below what is expected for this site. The shrubs and forbs matches what is expected for this site and is rated as moderate. Even though this site has some reduction in grasses, it still has the ability to allow for functionality of the plant community. The non-native cheatgrass are common throughout the area. There are no noxious weeds observed within this site. This site showed that the native plant community has sufficient vigor and reproductive capability for the perennial plant species within this site are competing with the cheatgrass to fill the vacant niches and voids but are not filling them fully.

SMU-89 the shrubs have moved from dominant species to sub-dominant species and non-native cheatgrass has become the dominant species on site. The amount of perennial grasses is below what is expected for this site and is a sub-dominant component of this community. There are no noxious weeds observed within this site. This site showed that the native plant community has sufficient vigor and reproductive capability for the perennial plant species within this site are competing with the cheatgrass to fill the vacant niches and voids but are not filling them fully. This area represents approximately 160 acres of this pasture.

Majority of the Sand Flats West Pasture is meeting desired species item (c). Except for 160 acres within the SMU-89 area is not meeting this item.

Sand Flats East Pasture: As documented in the Indicators of Rangeland Health data sheets:

SMU-71 upland site the dominant shrub component is slightly below what is expected for this site and the subdominant grasses within in this ecological site description is a minor component. There is no cheatgrass or no noxious weeds observed within this site. This site has the ability to allow for functionality of this plant community. This upland site makes up the majority of the acres within this pasture. This site showed that the native plant community has sufficient vigor and reproductive capability for the perennial plant species within this site to reestablish disturbed areas filling the niches and voids left after a disturbance with the exception of perennial grasses have reduce capability to reproduce.

Within KA-14 upland site there has been a major loss of perennial grasses due to the pass drought and major reduction in shrubs are due to an insect infestation with the Fourwinged saltbush. The cheatgrass is the dominant species which has replaced the dominant perennial grasses within this site. The perennial grasses and shrubs are sub-dominating species within this community. There are no noxious weeds observed within this site. This site has the potential for further invasions of non-native species and noxious weeds to occupy the niches and voids. KA-14 capability of reproduction of shrubs and grasses is greatly reduced. However there are reproduction that is occurring with young perennial grasses and young Fourwinged saltbush. This area represents approximately 180 acres of this pasture and is not meeting desired species item (c).

Majority of the Sand Flats East Pasture is meeting desired species item (c) except for 180 acres within the KA-14 area is not meeting this item.

Knowles Pasture: As documented in the Indicators of Rangeland Health data sheets:

SMU-12 upland site shows the desired plant community with the exception of the non-native cheatgrass being common throughout the area. There are no noxious weeds observed within this site. This site showed that the native plant community has sufficient vigor and reproductive capability for the perennial plant species within this site to reestablish disturbed areas filling the niches and voids left after a disturbance. The plants are competing with the cheatgrass to fill the vacant niches.

KA-16 and KA-27 the dominant shrub component matches what is expected for these sites and the sub-dominant grasses within this ecological site description are a minor component. Within KA-27 there is no cheatgrass or noxious weeds and KA-16 there are a few cheatgrass and tumble weeds plants along the county road. This site has the ability to allow for functionality of the plant community. These sites showed that the majority of the native plant community has sufficient vigor and reproductive capability for the perennial plants species within this site to reestablish disturbed areas filling the niches and voids left after a disturbance with the exception of perennial grasses have reduce capability to reproduce. There are young perennial grasses and shrubs throughout these sites. These upland sites make up the majority of the acres within this pasture.

SMU-89 the shrubs have moved from dominant species to sub-dominant species and non-native cheatgrass has become the dominant species and is scatter throughout this site. The amount of perennial grasses has moved from sub-dominant component to dominant species for this site.

Perennial grasses and cheatgrass are co-dominant component of this plant community. There are no noxious weeds observed within this site. This site showed that the native plant community has sufficient vigor and reproductive capability for the perennial plant species within this site are competing with the cheatgrass to fill the vacant niches and voids but are not filling them fully.

Knowles Pasture is meeting desired species item (c).

Cow Creek Pasture: As documented in the Indicators of Rangeland Health data sheets:

KA-7 and SMU-47 upland sites show the desired plant communities. KA-7 there is no cheatgrass or noxious weeds and SMU-47 there are a few cheatgrass plants within disturbed areas and no noxious weeds. These sites showed that the native plant community has sufficient vigor and reproductive capability for the perennial plant species within this site to reestablish disturbed areas filling the niches and voids left after a disturbance.

Cow Creek Pasture is meeting desired species item (c).

Sand Blast Pasture: As documented in the Indicators of Rangeland Health data sheets:

KA-39 upland site shows the desired plant community with a slight reduction of sub-dominant shrub group species. Within KA-39 there are a few cheatgrass plants within disturbed areas and no noxious weeds. This site showed that the native plant community has sufficient vigor and reproductive capability for the perennial plant species within this site to reestablish disturbed areas filling the niches and voids left after a disturbance.

Sand Blast Pasture is meeting desired species item (c).

Buckhorn Pasture: As documented in the Indicators of Rangeland Health data sheets:

KA-24 upland site has the desired plant community which is functioning to the desired level of productivity and ecological condition. KA-24 the cheatgrass and juniper trees are scattered throughout this sagebrush community. There are no noxious weeds within this site. This site showed that the native plant community has sufficient vigor and reproductive capability for the perennial plant species within this site to reestablish disturbed areas filling the niches and voids left after a disturbance.

KA-21 upland site the dominant shrub component matches what is expected for this site and the subdominant grasses within this ecological site description are a minor component. This upland site makes up the majority of the acres within this pasture. This Key Area has some cheatgrass plants under the juniper trees only and there are no noxious weeds. This site has the ability to allow for functionality of this plant community. This site showed that the majority of the native plants has sufficient vigor and reproductive capability for the perennial plants species within this site to reestablish disturbed areas filling the niches and voids left after a disturbance with the exception of perennial grasses have reduce capability to reproduce. There are young perennial grasses and shrubs plants throughout these sites.

Buckhorn Pasture is meeting desired species item (c).

Hotel Mesa Pasture: As documented in the Indicators of Rangeland Health data sheets:

SMU-98 upland site closely matches the desired plant community which is functioning to the desired level of productivity and ecological condition. SMU-98 has no cheatgrass or noxious weeds. This site showed that the native plant community has sufficient vigor and reproductive capability for the perennial plant species within this site to reestablish disturbed areas filling the niches and voids left after a disturbance.

KA-13 upland site the dominant shrubs component has been reduced to a sub-dominant group and the sub-dominant grasses has increase to become the dominant species within this blackbrush community. Cheatgrass is common throughout this area and there are no noxious weeds. This site showed that the native plants has sufficient vigor and reproductive capability for the perennial plants species within this site to reestablish disturbed areas filling the niches and voids left after a disturbance. There are young perennial grasses and shrubs plants throughout this site.

KA-8 upland site the co-dominant shrubs and grasses are below what is expected for this site and the shrubs have become sub-dominant plant group. Cheatgrass is found along the county road and in disturbed areas and there are no noxious weeds. This site showed that the native plant community has sufficient vigor and reproductive capability for the perennial plant species within this site to reestablish disturbed areas filling the niches and voids left after a disturbance. There are young perennial grasses and shrubs plants throughout this site.

Hotel Mesa Pasture is meeting desired species item (c).

d) Habitats for threatened, endangered and special-status species managed to provide for recovery and move species toward recovery and move species toward de-listing.

The Sand flats Allotment contains a variety of habitats for both Federally Listed species and locally important wildlife.

Federally Listed Species Habitat and Concerns

Mexican Spotted Owl (MSO) (Federal Threatened)

With the exception of the Colorado River corridor, the Sand Flats Allotment does not offer suitable MSO nesting habitat. The eastern portion of Coates Creek modeled potentially suitable according to the 1997 Willey-Spotskey MSO habitat model, but field evaluations in 2008 determined this area unsuitable for MSO occupation. The remainder of the allotment models as potential foraging with isolated pixels of breeding, therefore not warranting evaluations. The northeast portion of the Knowles Pasture is boarded by suitable MSO habitats along the Colorado River corridor. The area has been evaluated and protocol surveyed in 2007 and 2008 and no owls were detected therefore this area is current for MSO absents.

Southwestern Willow Flycatcher (SWFL) (Federal Endangered)

Evaluation conducted in 2006 by Bill Sloan indicates the following: Breeding habitat is abundant along both the Colorado and the Dolores Rivers and there is isolated marginal breeding habitat in the lower fork of Coates Creek. The vegetation, mostly tamarisk and some willow, offer good SWFL habitat in non-continuous patches of dense and tall growth. A fork of lower Coates Creek that approaches from the south, about a mile west of the Colorado River, offers isolated but marginally adequate nesting habitat. Cottonwood trees and dense willows, reaching heights of 10 feet, are around the standing water in the wash. The two small patches are not continuous, however, and the isolation from habitat along the river reduces its value as habitat. The Dolores River has had several surveys with many migration SWFL detections over the past ten years, indicating these areas are used as migration habitat and may have the potential to harbor breeding pairs, though nesting has not yet been documented. Near the Dolores River's confluence with the Colorado River (2005 & 2006) surveys by Matt Johnson produced numerous SWFL migrant detections. The Colorado River from the Colorado State line to its confluences with the Dolores River has also had protocol SWFL surveys performed in recent years. Survey performed along the Colorado River from the State line through to Westwater Canyon (2008) by the Utah DWR produced numerous SWFL migrant detections. In 2010, survey performed by the Park Service from Westwater Canyon to Hotel Mesa bottom detected numerous migrant SWFL through the Sand Flats Allotment, therefore it can be assumed that there is high potential for continual migrant SWFL occupation along this reach of the Colorado River and there also may be the potential for nesting occupancy.

Yellow-billed Cuckoo (YBC)

The Western Yellow-billed cuckoo (YBCU) is associated with cottonwoods and riparian cover, which provides nesting and brood-rearing habitat. Cuckoos are obligate riparian nesters and are restricted to more mesic habitat along rivers, streams, and other wetlands. The YBCU has been recently listed (November 2014) due to loss of riparian habitat from agricultural use, water use, road development and urban development. The MFO contains approximately 860 acres of designated critical habitat of which 230 acres are located on federal lands currently proposed by the Service along the Colorado River. No known nesting population of this species exists at the present on federal lands within the MFO, but limited surveys for this species have identified several detections over the past ten years.

Adam Petry with Western Biology and in coordination with Southwest Research, Inc. (SWR) performed habitat suitability evaluations along the Colorado and Dolores rivers that boarder this allotment. It was determined that this allotment may offer some level of migratory habitats. Areas along the Colorado River and at the confluence of the Dolores River, where the USFWS has designated Critical Habitats for the YBCU, may offer limited foraging and nesting habitat within the Sand Flats Allotment.

Jones Cycladenia (Threatened Plant Species)

JG Management Systems, Inc. developed a model in the fall of 2011 for Jones Cycladenia using the soil and elevation parameters of known sites on BLM lands (Sansom, and Elliott. 2014). The quantity of sites occurring within given elevation ranges on two particular soil types were then summed to result in the ranking or potential that a new occurrence could be identified in a particular area or complex. Surveys completed during 2012 and 2014 gave additional data to

facilitate the development of additional differentiation between the two elevation bands that are most likely to yield new occurrences of the species. Both populations in Moab are located on very steep slopes and are inaccessible to cattle. Jones Cycladenia Model show potential habitat within the Sand Flats Allotment in the following pastures: Sand Flats West, Sand Flats East, Knowles, Cow Creek, Sand Blast, Buckhorn and the eastern portion of the Hotel Mesa. At the present time there are no known populations of Jones Cycladenia within the Sand Flats Allotment. Jones Cycladenia was listed as threatened under the ESA on May 5, 1986 (USFWS ECOS 2012). The species is an endemic of the Chinle, Cutler, and Summerville Formations and found in plant communities of mixed desert scrub, juniper, or wild buckwheat-Mormon tea (USFWS 2008). Jones Cycladenia is restricted to soils with a narrow range of morphological and physical properties. Soils are shallow (<50 cm), have high rock fragment content (increases to almost 100% with depth), and are formed in shale that fractures angularly in situ. Soils that support Jones Cycladenia often occur on steep slopes (50%) with erosive surfaces (Boettinger 1998).

Jones Cycladenia is thought to be a Tertiary relict, poorly adapted to the present-day arid climatic regime found within an ecosystem that is thought to be fragile, easily degraded and slow to recover. Ongoing and potential anthropogenic impacts to habitat include off-highway vehicle (OHV) use; oil, gas and mineral exploration, including uranium mining and tar sands; and livestock grazing (although the rule, 51 FR 16526, May 5, 1986, notes the probability of grazing causing serious damage was low). Habitat disturbance was thought to reduce seedling establishment and the species has also suffered from inadequate State and Federal regulatory mechanisms.

Colorado River Endangered Fish

The backwaters of the Colorado River provide spawning and nursery habitat for the Endangered Colorado River fish and other native and state sensitive fish. Spawning, post-spawning, incubation, and fry stages of the Endangered Colorado River fish is typical May through August. Critical Habitat for the Colorado pikeminnow, razorback sucker, humpback chub and the bonytail chub can be found in waters associated with the Colorado River adjacent to the Sand Flats Allotment.

Utah BLM Sensitive Species:

There is potential habitat for Allen's big-eared bat, Townsend's big-eared bats, spotted bats, and Fringed myotis based on the Utah Natural Heritage database. There is one active bald eagle nesting territory is located within the Knowles Pasture of the Sand Flats Allotment adjacent to the Colorado River. There have been several nest utilized in this territory since it was first discovered in the 1980s. One known nest is located on private land on a large island and the second nest is on public lands along the Colorado River. Both nests have received documented use during the past several years and the nesting territory is typically active each year. The entire Colorado River corridor adjacent to the Sand Flats Allotment is essential to summer foraging. There is the potential that eagles may use some of this area as winter foraging and the nesting pairs may also forage on uplands throughout this allotment during nesting season (01/01 to 08/15). The special status fish species and habitats (Bluehead sucker, Roundtail chub and flannel-mouth sucker) are present within the Dolores and Colorado Rivers which are adjacent to

this allotment. There is potential habitat for the Dolores rushpink within this allotment. The Dolores rushpink is found in juniper, sagebrush, rabbitbrush, and blackbrush communities in reddish alluvial soil, at 4,600 to 4,700 feet and flowers in June. There is a lack of plant surveys for this plant and at the present time there are no known populations of this sensitive plant species within this allotment.

Table 4: Special Status Species in Utah with Potential Habitat within Sand Flats Grazing Allotment

Common Name	Scientific Name	Status	Critical Habitat
<i>BIRDS</i>			
Bald Eagle	<i>Haliaeetus leucocephalus</i>	Utah State Sensitive	No
<i>FISH</i>			
Bluehead Sucker	<i>Catostomus discobolus</i>	Utah State Conservation Species	No
Roundtail Club	<i>Gila robusta</i>	Utah State Conservation Species	No
Flannel-mouth Sucker	<i>Catostomus latipinnis</i>	Utah State Conservation Species	No
<i>MAMMALS</i>			
Allen's big-eared bat	<i>Idionycteris phyllotis</i>	Utah State Sensitive	No
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	Utah State Sensitive	No
Spotted bat	<i>Euderma maculatum</i>	Utah State Sensitive	No
Fringed myotis	<i>Myotis thysanodes</i>	Utah State Sensitive	No
<i>PLANTS</i>			
Dolores rushpink	<i>Lygodensmia Grandiflora</i> var. <i>Doloresensis</i>	Utah State Sensitive	No

Migratory Birds

The Migratory Bird Treaty Act, as amended, was promulgated for the protection of migratory birds. All raptors observed in Utah are protected by the Migratory Bird Treaty Act and some birds are also protected by the Endangered Species Act (ESA), the Bald and Golden Eagle Protection Act, and/or are included in the Utah Natural Heritage Program Species of Greatest conservation Need (UDWR, 2005). BLM Instruction Memorandum 2008-050 provides current management guidance for the conservation of migratory birds (BLM, 2008b). In addition, the FWS has issued guidelines for the protection of raptors in the State of Utah (FWS, 1999). These guidelines include species-specific prescribed offsets for stipulated timing limitation periods. The direction includes identifying species listed in the FWS Birds of Conservation Concern

(BCC) that are likely to be present in the area of a proposed action. The Utah Partners in Flight (UPIF) working group completed a statewide avian conservation strategy identifying “priority species” for conservation due to declining abundance distribution, or vulnerability to various local and/or range-wide risk factors. One application of the strategy and priority list is to give these birds specific consideration when analyzing effects of proposed management actions and to implement recommended conservation measures where appropriate.

The UPIF Priority Species List and the Utah Conservation Data Center database were used to identify potential habitat for priority species that could utilize habitat within the project area. Potential habitat and species are listed below.

Table 5: Utah Partners in Flight Priority Species

Utah Partners in Flight Priority Species			
Bird Name	DWR Habitat Value**	Breeding Habitat Type*	Winter Habitat*
Virginia’s Warbler	Wintering Habitat	N/A	Migrant
Gray Vireo	Prime Breeding	Pinyon-Juniper	-----
Brewer Sparrow	High Value Habitat	Shrubsteppe	Migrant
Broad-tailed Hummingbird	Critical Value Habitat	Riparian	Migrant
Gambel’s Quail	High	Low Desert Scrub	Low Desert Scrub
Golden Eagle	Critical/High	Cliff	High Desert Scrub
Juniper Titmouse	Critical/High	Pinyon-Juniper	Pinyon-Juniper
Peregrine Falcon	Critical	Cliff	Wetlands
Pinyon Jay	Critical/High	Pinyon-Juniper	Pinyon-Juniper
Prairie Falcon	Critical/High	Cliff	Agriculture
Sage Sparrow	Critical	Shrubsteppe	Low Desert Scrub

**Utah Partners in Flight Avian Conservation Strategy Version 2.0*

***Utah Conservation Data Center*

Big Game Species

There are crucial winter range for deer and elk within the Sand Flats Allotment. This allotment has a lot of deer that winters during November through April and there are a few elk that winters during November to March. The Knowles Pasture within the Sand Flats Allotment contains desert bighorn sheep habitat. The Utah Division of Wildlife Resources and BLM biologists have identified disease transmission from domestic sheep to bighorn sheep as the greatest threat to bighorn herds within the Moab Field Office. This allotment is grazed by cattle and there will be no change in class of livestock from cattle to sheep within this bighorn sheep area. There is a small population of bighorn sheep that make use of this allotment.

Other Wildlife

Animals typically associated with desert shrub communities and canyon topography may include mountain lions, bobcats, coyotes, numerous species of snakes, lizards, small mammals, songbirds and raptors. The most commonly observed species include gopher snakes, antelope ground squirrels, cottontail rabbits, blacktailed jackrabbits, coyotes, mourning doves, horned larks, golden eagles, redtailed hawks and ravens.

- e) **Appropriate amount, type, and distribution of vegetation reflecting the presence of (1) the desired plant community (DPC), where identified in a land use plan, conforming to these standards or (2) where the DPC is not identified, a plant community that equally sustains the desired level of productivity and properly functioning ecological conditions.**

Majority of the Sand Flats Allotment is meeting this indicator; however there are 180 acres in KA-14 within the Sand Flat East Pasture, there are 160 acres in KA-14 and 140 acres in SMU-89 within the Sand Flat West Pasture which has a problem with a major reduction of perennial plants and increasing in cheatgrass within these areas. These areas represent 1½% of the total BLM acres within the allotment and are also a minor component within these pastures. The major causes of the reduction in amount of perennial plants are due to an insect infestation with the saltbush, drought during the 1990's and livestock grazing during the spring months.

Sand Flats West Pasture: As documented in the Indicators of Rangeland Health data sheets.

Within SMU-12, KA-15 and KA-17 shows these plants communities capable of being equally sustainable to the DPC with the exception of cheatgrass being more prominent. Cheatgrass has the potential to change ecological conditions.

- The hydrological process is changed due to the growth of the plant. Cheatgrass begins growing in the fall and even when snow is on the ground, this allows for the plant to grow and develop rapidly during the spring months. This reduces the amount of water that would have infiltrated into the ground.
- Nutrient cycling is changed, the cheatgrass uses up nutrients relatively fast during the growing season. Nutrients like nitrogen and phosphorus are typically the limiting factor to the growth of plants. This makes the nutrients less available to native plants.

Even though the cheatgrass is present the native plants are competing for the resources and helping to sustain the ecosystem. These sites are functioning with the current ecological conditions.

KA-14 and SMU-89 does not show the appropriate amount, type, and distribution of the DPC. These sites do appear to be changing from a shrub dominated communities to a cheatgrass dominated community. At the present time these areas are functioning-at-risk due to the high amount of cheatgrass and reduction of native vegetation. These sites represents a small portion (140 and 160 acres) of this pasture which is 1% of the total BLM acres within the allotment.

Sand Flats East Pasture: As documented in the Indicators of Rangeland Health data sheets.

SMU-71 upland site shows the appropriate amount, type and distribution of vegetation that reflects the desired plant community (DPC). This site is in properly functioning condition with the current ecological condition.

KA-14 does not show the appropriate amount, type, and distribution of the DPC. This site does appear to be changing from a perennial grasses dominated community to a cheatgrass dominated community. At the present time this area is functioning-at-risk due to the high amount of cheatgrass and reduction of native vegetation. The long term studies show this area has a slightly upward trend. This site represents a small portion (180 acres) of this pasture which is ½% of the total BLM acres within the allotment. Cheatgrass has the potential to change ecological conditions.

- The hydrological process is changed due to the growth of the plant. Cheatgrass begins growing in the fall and even when snow is on the ground, this allows for the plant to grow and develop rapidly during the spring months. This reduces the amount of water that would have infiltrated into the ground.
- Nutrient cycling is changed, the cheatgrass uses up nutrients relatively fast during the growing season. Nutrients like nitrogen and phosphorus are typically the limiting factor to the growth of plants. This makes the nutrients less available to native plants.

Knowles Pasture: As documented in the Indicators of Rangeland Health data sheets.

KA-17 and KA-27 upland sites are close to showing the appropriate amount, type and distribution of vegetation that reflects the desired plant community (DPC). These sites are in properly functioning condition with the current ecological condition.

SMU-12 shows this plant community is capable of being equally sustainable to the DPC with the exception of cheatgrass being more prominent.

SMU-89 upland site the shrub component has moved from dominant species to sub-dominant species. Cheatgrass and perennial grasses has become the dominant species on site. This site

has good plant species diversity throughout the area. SMU-89 site has the ability to allow for functionality of the plant community. Even though the cheatgrass is present the native plants are competing for the resources and helping to sustain the ecosystem. This site is functioning with the current ecological conditions. Cheatgrass has the potential to change ecological conditions.

- The hydrological process is changed due to the growth of the plant. Cheatgrass begins growing in the fall and even when snow is on the ground, this allows for the plant to grow and develop rapidly during the spring months. This reduces the amount of water that would have infiltrated into the ground.
- Nutrient cycling is changed, the cheatgrass uses up nutrients relatively fast during the growing season. Nutrients like nitrogen and phosphorus are typically the limiting factor to the growth of plants. This makes the nutrients less available to native plants.

Cow Creek Pasture: As documented in the Indicators of Rangeland Health data sheets.

All upland sites shows the appropriate amount, type and distribution of vegetation that reflects the desired plant community (DPC) with the exception of cheatgrass being found on disturbed areas only. These sites are in properly functioning condition with the current ecological conditions.

Sand Blast Pasture: As documented in the Indicators of Rangeland Health data sheets.

KA-39 upland site shows the appropriate amount, type and distribution of vegetation that reflects the desired plant community (DPC) with the exception of cheatgrass being found on disturbed areas only. These sites are in properly functioning condition with the current ecological conditions.

Buckhorn Pasture: As documented in the Indicators of Rangeland Health data sheets.

Within KA-21 and KA-24 shows these plant communities capable of being equally sustainable to the DPC with the exception of KA-24 has cheatgrass scatter throughout this site. Even though the cheatgrass present the native plants are competing for the resources and helping to sustain the ecosystem. These sites are functioning with the current ecological conditions. Cheatgrass has the potential to change ecological conditions.

- The hydrological process is changed due to the growth of the plant. Cheatgrass begins growing in the fall and even when snow is on the ground, this allows for the plant to grow and develop rapidly during the spring months. This reduces the amount of water that would have infiltrated into the ground.
- Nutrient cycling is changed, the cheatgrass uses up nutrients relatively fast during the growing season. Nutrients like nitrogen and phosphorus are typically the limiting factor to the growth of plants. This makes the nutrients less available to native plants.

Hotel Mesa Pasture: As documented in the Indicators of Rangeland Health data sheets.

KA-8 and SMU-98 upland sites are close to showing the appropriate amount, type and distribution of vegetation that reflects the desired plant community (DPC). These sites are in properly functioning condition with the current ecological condition.

KA-13 shows this plant community capable of being equally sustainable to the DPC with the exception of cheatgrass being more prominent. Even though the cheatgrass is present the native plants are competing for the resources and helping to sustain the ecosystem. This site is functioning with the current ecological conditions. Cheatgrass has the potential to change ecological conditions.

- The hydrological process is changed due to the growth of the plant. Cheatgrass begins growing in the fall and even when snow is on the ground, this allows for the plant to grow and develop rapidly during the spring months. This reduces the amount of water that would have infiltrated into the ground.
- Nutrient cycling is changed, the cheatgrass uses up nutrients relatively fast during the growing season. Nutrients like nitrogen and phosphorus are typically the limiting factor to the growth of plants. This makes the nutrients less available to native plants.

#4 Clean Water

Utah Rangeland Health Standard #4 requires “BLM will apply and comply with water quality standards established by the State of Utah (R.317.2) and the Federal clean Water and Safe Drinking Water Acts. Activities on BLM lands will fully support the designated beneficial uses described in the Utah Water Quality Standards (R.317-2) for surface and ground water. As indicated by:

- Measurement of nutrient loads, total dissolved solids, chemical constituents, fecal coliform, water temperature and other water quality parameters.
- Macro invertebrate communities that indicate water quality meets aquatic objectives.

Utah water quality standards do not apply to ephemeral drainages and the associated storm runoff flows.

Cane Spring wetland (State lands)

No water quality data is available for this spring wetlands at the present time and the wetlands is located on Utah State Lands. BLM will not be collecting water quality data for this wetland due to the wetland is located on Utah State Lands. At the present time this wetland spring is Properly Functioning condition (PFC) and trend is not apparent.

Cane Creek (stream portion)

No water quality data is available for this stream portion of the spring at the present time. At the present time this stream is Properly Functioning condition (PFC) and trend is in an upward direction.

Coates Creek

No water quality data is available for this creek at the present time. At the present time this creek has 10¼ miles that is Properly Functioning condition (PFC) and ½ mile that is Functioning-at-Risk which includes two riparian livestock exclosures. The trend is not apparent for the whole Coates Creek.

Two small Seeps (Unnamed)

No water quality data is available for these seeps and BLM will not collect water quality data for these very small seeps. At the present time these seeps are Properly Functioning condition (PFC) and trend is not apparent. These two seeps are dry majority of the year (11 months).

Ryan Creek

No water quality data is available for this creek at the present time. At the present time this creek is Properly Functioning condition (PFC) and trend is not apparent.

Lower Renegade Creek

No water quality data is available for this creek. At the present time this creek is Properly Functioning condition (PFC) and trend is not apparent.

Dry Gulch Seeps

No water quality data is available for these seeps and BLM will not collect water quality data for these very small seeps. At the present time these seeps are Properly Functioning condition (PFC) and trend is not apparent.

Buckhorn Spring

No water quality data is available for this small spring. At the present time this spring is Properly Functioning condition (PFC) and trend is not apparent. This spring has a range improvement project which the spring area is fence out of cattle use and water is piped into two troughs downstream. At the present time the troughs and pipeline are not functional.

Buckhorn Draw Seep (by the old cabin site)

No water quality data is available for this small seep and BLM will not collect water quality data for this very small seep. At the present time this seep is Functioning-at-Risk (FAR) and trend is not apparent.

Buckhorn Draw Seep

No water quality data is available for this seep and BLM will not collect water quality data for this very small seep. At the present time this seep is Properly Functioning condition (PFC) and trend is not apparent.

Dolores River Oxbow

No water quality data is available for this oxbow of standing water. At the present time this oxbow is Properly Functioning condition (PFC) and trend is not apparent.

Sand Flats Seep

No water quality data is available for this very small seep and BLM will not collect water quality data for this very small seep. At the present time this seep is Properly Functioning condition (PFC) and trend is not apparent.

Cow Creek

No water quality data is available for this creek. At the present time this creek is Properly Functioning condition (PFC) and trend is not apparent.

Dolores River

There is water quality data available for the Dolores River, measured adjacent to the allotment. The State of Utah monitors water quality just upstream of the confluence with the Colorado River on a frequent basis. The Dolores River and its tributaries (except Granite Creek) are on the List of Impaired Waters, 2008, submitted to EPA in May, 2008. The pollutants are identified as salinity, total dissolved solids and chlorides. No report (TMDL) has been initiated to date on this situation. When recommendations from the state are developed, BLM will follow all recommendations that apply. These recommendations may include improvements to the riparian conditions along the Dolores river corridor. At the present time this river is Properly Functioning condition (PFC) and the trend is upward.

Colorado River

The Colorado River is sampled at the Utah-Colorado state line (approximately 13 miles upstream of the allotment) and at Highway 191 (approximately 25 miles downstream of the allotment). These sites are sampled by State of Utah DWQ staff on a regular basis. The Colorado River is on the List of Impaired Waters published by the State of Utah. The segment of the river from the Utah-Colorado Stateline to the confluence with the Green River has been determined to be not meeting beneficial use classification 3B", due to high levels of selenium. Classification 3B protects warm water species of game fish and other warm water aquatic life, including the necessary aquatic organisms in their food chain. The main source of selenium is Mancos Shale areas in Colorado, with the highest contributions from the Grand Junction and Montrose areas. At the present time this river is Properly Functioning condition (PFC) and the trend is upward.

General Analysis of Water Quality

Since a detailed analysis of the watersheds and related water quality data has not been completed to date, we do not know how much (if at all) the Sand Flats Allotment is contributing to water quality conditions on the Colorado and Dolores Rivers. The main issue for the Colorado River is the increase in selenium and the main source of selenium is Mancos shale areas in Colorado, with the highest contributions are from the Grand Junction and Montrose areas. The soils, floodplains and riparian resources in the allotment are in good condition. There are 15 different riparian areas within the Sand Flats Allotment which is 32 ½ miles of rivers and creeks and there is also 7 ½ acres of wetland area. All the wetland and majority of the rivers and creeks are Properly Functioning condition (PFC). There is ½ mile of Coates Creek and ¼ mile of Buckhorn Draw Seep (by the old cabin) that are Functioning-at-Risk (FAR). Based on the perennial water in the Sand Flats Allotment we have concluded that it is meeting Utah Rangeland Health Standard #4.

Supplemental Information

Precipitation Data

Precipitation rain gauges have been read for 25 years and the last 12 years of data is shown on the table below from 2003 to 2015. Within the last 12 years there has been one drought year in 2011-2012 which was 57% of the long term normal precipitation. During the drought year there was discernible impacts to vegetation within some of the long term trend studies sites within this allotment.

Sand Flats (Dolores Triangle) Rain Gauge

Year	Inches of Precipitation	Percent of Average (9.29 inches)
2003-04	7.9	85%
2004-05	12.6	136%
2005-06	8.1	87%
2006-07	7.55	81%
2007-08	10.7	115%
**2008-09	6.5	70%
2009-10	10.7	115%
2010-11	11	118%
*2011-12	5.3	57%
2012-13	9.8	106%
2013-14	9.8	106%
2014-15	12.6	136%

*Drought year

** Very dry year

Long Term Range Monitoring Studies

Long term range monitoring studies indicate a vegetative trend within the allotment is static to upward and a few areas of downward trend. There are three livestock exclosure (keep livestock out) which are showing two exclosure with static trend and one with downward trend. Long term range trend studies are taken from Table 19 of the EA on page39.

Apparent Trend Studies

Apparent trend has been static to upward trend and this information is from Appendix E of this EA.

Utilization Studies

Utilization by pasture show that Sand Flat West Pasture is receiving moderate use, Sand Flat East Pasture is light to moderate use, Knowles pasture is slight use, Buckhorn Pasture has majority slight use with two area of sagebrush receiving moderate and heavy use, Sand Blast Pasture is light use, Hotel Mesa Pasture is slight to moderate use and Cow Creek Pasture is

moderate use. Majority of the Sand Flats Allotment is slight to moderate use. However the use on the sagebrush has been heavy in most years due to the wintering deer herd. In most years the warm season grasses (Galleta grass and Sand dropseed grass) utilization has been slight to moderate use, cool season grasses (Indian ricegrass and Needle & thread grass) has been slight to heavy use and majority of the shrubs (Mexican cliffrose, Fourwinged saltbush, shadscale, winterfat, spiny Hopsage, blackbrush and Mormon tea) has been slight to moderate use however, Wyoming sagebrush utilization has been heavy in most years due to the wintering deer herd.

Actual Use Data

As summarized in Appendix F of this EA, the average actual use from 2003 to 2015 was 842 AUMs used or 73% of the Active Preference AUMs.

Overall Summary of the Sand Flats Allotment

Based on this evaluation the Sand Flats Allotment is meeting all the Standards for Rangeland Health. However, there are three small areas within this allotment that is not meeting vegetation portion of Standard #3. There are three areas within the Sand Flats Allotment which amount to 480 acres or is 1½% of the total BLM acres within the allotment. By developing a spring rotation system for the spring pastures will help to improve the long term trend and help in making progress toward meeting vegetation portion of Standard #3 for these 480 acres.

Interdisciplinary Team

Ann Marie Aubry (soil, Water Quality, and Riparian)

Pamela Riddle (Wildlife)

Jordan Davis (Soil, Range and Vegetation)

Daryl Trotter (Range and Vegetation)

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RANGELAND HEALTH EVALUATION

Site/Area: Scharf Mesa Allotment **BLM Acres:** 9,436

Dates of Range Assessments/Visits: August 11, 2009 and August 12, 2009

Sand Flats Allotment Rangeland Health Evaluation: September 2013 and updated data in 2015

Rangeland health assessments were conducted on the allotment during the summer of 2009. The 17 Indicators of Rangeland Health were used to evaluate the health of the allotment. The indicators are primarily qualitative with several areas that are quantitative, which focuses on individual indicators and later combines several indicators to help in assessing the soils, hydrology, and vegetation. Trend data including density and photo plots has been collected in the allotment for twelve years. Riparian assessments were conducted using proper functioning condition methodology.

Assessment sites were selected using soil map units (SMU). Each SMU includes a complex of several different ecological sites; these sites are different in vegetation composition, soil type, and texture. Within several of the ecological sites the Bureau of Land management (BLM) has established monitoring sites. The monitoring sites are called key areas (KA). KA have had trend data, apparent trend and utilization completed for fifteen years and track the changes in vegetation at the sites. This information is used to help determine the amount of disturbance that livestock and wildlife has on the sites.

Monitoring sites were established within several representative ecological sites. The monitoring sites are called key areas (KA). KA have had long term trend, apparent trend and utilization data completed for 12+ years and tracked the changes in vegetation at the sites. This information is used to help determine livestock grazing affects vegetation. However in 2012 base line frequency trend studies and line intercept studies was setup to replace the old density studies within this allotment. Riparian assessments were conducted using proper functioning condition methodology.

The assessments were conducted on SMUs 8, 67, and 71 (for SMU descriptions refer to the USDA, Soil Survey of Canyonlands Area, Utah, Parts of Grand and San Juan Counties, 1991). The assessments are named KA-2 (SMU71) (Rizno, dry-Rock outcrop complex) and KA-3 (SMU8) (Begay fine sandy loam); and SMUs 8 (Begay fine sandy loam) and 67 (Redbank fine sandy loam). These SMUs and KA represents majority of the BLM acres within this allotment. Riparian Assessments were conducted on the Dolores River and Buckhorn Spring.

The Scharf Mesa Allotment is located approximately 17 to 19 air miles northeast of Moab, Utah. This allotment is within Grand County in the State of Utah within the Dolores Triangle Area.

Compliance with Rangeland Health Standards:

The following list shows the acreage in the allotment and the current active federal cattle AUMs within the allotment:

Allotment Name and Number	Livestock			Active Permitted Use (AUMs)	Acres	Land Status
	No.	Kind	Season of Use			
Scharf Mesa 05849	78	Cattle	12/01 to 03/31	312	9,478	BLM

Standard	Standard Met?	Progress Towards Meeting?	Rationale: (Summarize the evidence and indicators used to reach conclusions regarding meeting, not meeting and the progress towards meeting each Standard.)
#1 Upland Soils	Yes	N/A	<p>Indicators of Rangeland Health and long term trend monitoring data were used to make determination:</p> <p><i>Indicators of Rangeland Health used:</i></p> <p>Rills, Water flow patterns, Pedestals and/or teracettes, Bare ground, Gullies, Wind-scoured blowouts and depositional areas, Litter movement, soil surface resistance to erosion, Plant community composition and distribution relative to infiltration and runoff, Compaction layers, Functional/structural groups, Litter amount, and Invasive/noxious weeds</p>
a) Sufficient cover and litter to protect the soil surface from excessive water and wind erosion, promote infiltration, detain surface flow, and retard soil moisture loss by evaporation.	Yes	N/A	<p><u>Indicator: Wind-scoured blowouts and depositional areas</u></p> <p>No indications of wind scouring, blowout areas and excessive deposition were apparent at these four sites.</p> <p><u>Indicator: Soil surface resistance to erosion</u></p> <p>All four upland sites visited within this allotment during the field assessments exhibited sufficient cover which includes biological soil crust, rock cover, vegetation cover and litter relative to site potential to protect the soil from excess erosion from wind and water. The soil stability test was done on all sites showing the soil has good resistance to soil erosion. Erosion does not exceed what would be expected for the natural potential of these sites. Some of the allotment landscape is naturally erosive due to abiotic factors such as the existing geology and soils types, as well as geo-morphological characteristics.</p> <p><u>Indicator: Plant community composition and distribution relative to infiltration and runoff</u></p> <p>At the present time the amount of cheatgrass have only minor changes in the perennial plant species within KA-2 and have not changed the infiltration of this site.</p> <p>There has been some change in infiltration due to the increase in the amount of cheatgrass within KA-3, SMU8 and SMU67. The dominant perennial grasses are starting to be replaced by cheatgrass in KA-3 and SMU8. The SMU67 perennial grasses have been reduced from dominant species to sub-dominant species by cheatgrass.</p>

			<p>The majority of the water is leaving the sites as expected for these soil types and characteristic vegetative community. There are no major problems with soil erosion within the drainages of the evaluation areas. Majority of the soils are fine sandy loam which during periods of heavy precipitation, water is retained within the pores spaces of the soils evaluated; saturation occurs and remaining water will leave the sites as overland flow.</p> <p><u>Indicator: Compaction layers</u></p> <p>There is no compaction layers found at any of these sites.</p> <p><u>Indicator: Litter amount</u></p> <p>The amount of litter is slightly to moderately more than what is expected at KA-2 due to the amount of cheatgrass.</p> <p>KA-3 litter amounts match what is expected for this site.</p> <p>The amount of litter is moderately more than what is expected at SMU8 and SMU67 due to the high amount of cheatgrass.</p> <p>It should be noted that at KA-3, SMU8 and SMU67 cheatgrass is common throughout the sites, which is increasing the amount of litter.</p> <p><u>Indicator: Bare ground</u></p> <p>The amount of bare ground has been reduced only at SMU8, but there is 22-26% biological soil crust within this site. The amount of bare ground at the other sites matches what is expected for these sites.</p> <p>Generally, soil moisture loss through surface evaporation can be directly correlated to the percentage of bare ground. Therefore, direct soil moisture loss at the soil surface has not increased at the four upland sites due to annual inputs of herbaceous vegetative cover, amount of rock cover, biological soil crust and litter in relation to ecological potential; however, soil moisture may be depleted in the top horizons during the spring months due to the rapid growth of annual species, such as cheatgrass (<i>bromus tectorum</i>) that is common at KA-3, SMU8 and SMU67.</p>
b) The absence of indicators of excessive erosion such as rills, soil pedestals, and actively eroding gullies.	Yes	N/A	<p><u>Indicator: Rills</u></p> <p>There are no rills present at any of the sites.</p> <p><u>Indicator: Flow Patterns</u></p> <p>Flow patterns matches what is expected for all the sites.</p> <p><u>Indicator: Pedestal and/or teracettes</u></p> <p>There are no pedestals or teracettes present at any of the sites.</p>

			<p><u>Indicator: Gullies</u></p> <p>KA-2 and SMU8 has a few gullies which are stable with vegetation on the side slopes and in the bottom of the gullies. Gullies are healing. These sites match what is expected for these areas</p> <p>There are no gullies within KA-3 and SMU67.</p> <p><u>Indicator: Litter movement</u></p> <p>Litter is stay in place or very little movement within all the sites.</p>
<p>c) The appropriate amount, type, and distribution of vegetation reflecting the presence of (1) the desired plant community (DPC), where identified in a land use plan, conforming to these Standards or (2) where the DPC is not identified, a plant community that equally sustains the desired level of productivity and properly functioning ecological conditions.</p>	Yes	N/A	<p><u>Indicator: Functional/structural groups</u></p> <p>KA-2 upland site visited has the desired plant communities (DPC) identified in the land use plan and ecological site description found on the NRCS data base. This soil type and vegetation type makes up majority of the allotment. KA-2 showed slightly to moderately fewer shrubs than what is was expected at the site, but the shrubs are still the dominant group and grasses are still the subdominant group. There is good diversity of shrubs and grass species.</p> <p>SMU8 showed a moderate reduction in plants. The dominant plant group grasses are starting to be replaced by annual cheatgrass. The sub-dominant plant group shrubs are reduced from what is expected for the site. There is good diversity of shrubs and grass species. This community still has the ability to allow for functionality of the soils. This site is approximately 100 acres which is considered to be a minor component of this allotment.</p> <p>KA-3 and SM67 the perennial grass has moved from dominant species to sub-dominant species and cheatgrass has become the common species on these sites. The amount of perennial grasses has been significantly reduced throughout these sites. Shrubs are still the sub-dominant plant group and matches what is expected for these sites. There is still good diversity of perennial plant species. The change in the DPC at the present time has not impacted the soil within these sites. These sites represent approximately 280 acres which is considered to be a minor component of this allotment. Even though KA-3 and SMU67 are not meeting the appropriate amount and type for this community, it still has the ability to allow for functionality of the soils.</p> <p>Event through KA-3 and SMU67 is not meeting the standard #1 (c) it represents only 280 acres of the allotment and the remaining 9,198 acres are meeting and the standard is considered to be meeting this standard.</p> <p><u>Indicator: Invasive/Noxious weeds</u></p> <p>KA-2 showed moderately change from what is expected at this site, with cheatgrass being scattered throughout the area.</p>

			<p>KA-3, SMU8 and SMU67 showed a moderately to extreme change from what is expected at this site, with cheatgrass being common throughout the area.</p> <p><u>Long Term Density Trend:</u></p> <p>Within KA-2 and KA-3 the objectives for the grasses have not been met at the present time (2012). However, the objectives for shrubs have been met or exceeded (2012). The percent cover of galleta grass is static to upward trend at the present time and Indian ricegrass is also static. Wyoming sagebrush, winterfat, and Fourwing saltbush have a static trend. Shadscale has a static to upward trend at the present time. Blackbrush and shadscale in KA-2 represents a major plant component of this plant community. At the present time there is no objective for these plants. However the trend studies shows the numbers of blackbrush and shadscale plants are increasing within KA-2.</p> <p>This allotment is within a key wintering area for the Pinyon Mesa, Colorado deer herd. It is important to maintain the amount of shrubs within these four sites for the winter use by deer. At the present time majority of the shrubs are in a static trend.</p>
Other Issues within this allotment	OHV use is increasing throughout this allotment and impacts to soils (social trails, staging areas, etc.) are visibly noticeable.		
#2 Riparian	Yes	N/A	<p>Riparian areas were assessed using the “riparian Area Management (TR 1737-15, 1998). A User Guide to Assessing Proper Functioning Condition (PFC) and the supporting Science for Lotic Areas”. PFC assesses three separate categories of riparian areas, hydrology, vegetation, and erosion/deposition.</p> <p>An interdisciplinary team visited two sites within this allotment. One site was assessed along the Dolores River in T.23S. R.24E. Section 12, 13 and 18. The second site assessed was Buckhorn Spring in T.22S. R.25E. Section 33.</p> <p>The Dolores River is a perennial source of water. The Buckhorn spring is intermittent stream that has been developed with a pipeline and several troughs that supply water to both Scharf Mesa and Sand Flats Allotments. However due to the past droughts the surface water of this spring has dried up during most of the year. At the present time the spring development is not functioning. The spring box and pipeline are silted in and the troughs have holes in them. The spring box and spring source is fenced off from cattle grazing.</p> <p>Other washes throughout the allotment are typical entrenched ephemeral desert washes. At the present time Dolores River and Buckhorn spring are in Properly Functioning condition (PFC). The portion of the Dolores River within this allotment has an upward trend and Buckhorn spring trend is not apparent at the present time.</p>

<p>a) Streambank vegetation consisting of, or showing a trend toward, species with root masses capable of withstanding high streamflow events. Vegetative cover adequate to protect stream banks and dissipate stream blow energy associated with high-water flows, protect against accelerated erosion, capture sediment, and provide for groundwater recharge.</p>	<p>Yes</p>	<p>N/A</p>	<p><u>Dolores River:</u> The present vegetation within the Dolores River riparian area in relation to the abiotic and biotic characteristics of the landscape (natural potential) is adequate to capture sediment, protect against accelerated erosion and provide for groundwater discharge. Exotic tamarisk trees are common within portions of the riparian segment and contribute to dewatering of shallow groundwater, as well as competing for resources with native vegetation. Riparian vegetation (cottonwood tree, tamarisk trees, coyote willows, yellow willow, phragmites, rushes and salt grass) has root masses capable of withstanding high stream flow events. The riparian area has not achieved potential extent yet, but the trend is upward. The McPhee Reservoir upstream in Colorado helps control the amount of water within the Dolores River. However there is flooding that occurs during the spring run-off season. At the present time this riparian area is Properly Functioning Condition (PFC) and is in an upward trend.</p> <p><u>Buckhorn Spring:</u> The present vegetation within the Buckhorn Spring riparian area in relation to the abiotic and biotic characteristics of the landscape (natural potential) is adequate to capture sediment, protect against accelerated erosion and provide for groundwater discharge. Exotic tamarisk trees are common within portions of the riparian segment. They contribute to dewatering of shallow groundwater, as well as competing for resources with native vegetation. Riparian vegetation (cottonwood tree, tamarisk trees, black willows, coyote willows, and salt grass) has root masses capable of withstanding high stream flow events. There are no cut banks within this riparian area. This riparian area has achieved its potential extent. This riparian area is an intermittent stream and it dries up during late spring, summer and fall months. At the present time this riparian area is Properly Functioning Condition (PFC) and is not apparent at the present time.</p>
<p>b) Vegetation reflecting: DPC maintenance of riparian and wetland soil moisture characteristics, diverse age structure and composition, high vigor, large woody debris when site potential allows, and providing food, cover, and other habitat needs for dependent animal species.</p>	<p>Yes</p>	<p>N/A</p>	<p><u>Dolores River:</u> This riparian area flow along a major river in Utah and the vegetation is made of coyote willows, yellow willows, tamarisk trees, phragmites, cottonwood trees, rushes and salt grass.</p> <p>The vegetative community for the Dolores River riparian area provide for adequate species diversity; proper age class distribution; or maintenance of riparian and wetland soil moisture characteristics. All riparian plants species show high plant vigor, except for the tamarisk has low vigor due to a tamarisk leaf beetle which was introduced by the State of Utah. The willows are starting to replace the tamarisk within this vegetative community.</p> <p>This riparian area is meeting the habitat needs of local wildlife and migratory birds. This riparian area contains breeding and nesting habitat for the SWFL. There have been numerous migrant SWFL detections along the Dolores River adjacent to this allotment.</p> <p><u>Buckhorn Spring:</u> This riparian area is a developed spring that is piped to several troughs within two allotments (Scharf Mesa and Sand Flats</p>

			<p>Allotments) and the vegetation is made of coyote willows, black willows, tamarisk, cottonwood trees and salt grass.</p> <p>The vegetative community for the Buckhorn spring riparian area provide for adequate species diversity; proper age class distribution; or maintenance of riparian and wetland soil moisture characteristics. All riparian plants species show high plant vigor, except for the tamarisk has low vigor due to a tamarisk leaf beetle which was introduced by the State of Utah. The willows are starting to replace the tamarisk within this riparian area.</p> <p>This riparian area is meeting the habitat needs of local wildlife and migratory birds. The riparian area contains no habitat for the SWFL.</p>
c) Revegetating point bars; lateral stream movement associated with natural sinuosity; channel width, depth, pool frequency and roughness appropriate to landscape position.	Yes	N/A	<p><u>Dolores River:</u> Majority of the point bars have vegetation and becoming stabilized. The vegetation is capturing recent deposition on point bars and maintaining this balance during high flow periods. However, there are still some point bars with less riparian vegetation, but is starting to re-vegetate on these areas.</p> <p>This site is in balance with the natural ecosystem, it is a confined canyon and lateral stream movement associated with the natural sinuosity is in balance with the confinement of the canyon. The system is vertically stable with some bank cutting that is occurring, but no head cutting. The cut banks are showing signs of healing.</p> <p><u>Buckhorn Spring:</u> There are no point bars within this riparian area. This site is in balance with the natural ecosystem, and lateral stream movement associated with the natural sinuosity is in balance. The system is vertically stable with no down cutting or no head cutting. There are overflow channels and some large woody material to dissipate the energy.</p>
d) Active floodplain	Yes	N/A	<p><u>Dolores River:</u> Floodplain and channel characteristics (i.e., rocks, overflow channels, coarse and /or large woody material) are adequate to dissipate energy. During the spring run-off (snow melt) is when the floodplain become active. However the man-made dam upstream in Colorado controls the major flooding events except for the spring time.</p> <p><u>Buckhorn Spring:</u> Floodplain and channel characteristics (i.e., overflow channels, coarse and /or large woody material) are adequate to dissipate energy. During the spring run-off (snow melt) and summer precipitation events is when the floodplain became active. There is a lot of slick rock above this spring which increase the amount of water that floods during precipitation events. At the present time floodplain is in stable condition.</p>
#3 Biotic Component: Desired Plant, Wildlife Species, Special Status	Yes	N/A	<p>Indicators of Rangeland Health, long term trend monitoring data, and wildlife movement were used to make this determination:</p> <p><i>Indicators of Rangeland Health used:</i> Functional/structural groups, Plant mortality and decadence, Annual production, Invasive/noxious weeds,</p>

Species and Habitats			<p>Reproductive capability of perennial plants.</p> <p>Majority of this allotment is meeting the Biotic Component Standard #3. Even though KA-3 and SMU67 is not meeting the Standard #3 it represents only 280 acres of the allotment the remaining 9,478 acres are meeting and the standard is conclude to be meeting this standard.</p>
a) Frequency, diversity, density, age classes, and productivity of desired native species necessary to ensure reproductive capability and survival.	Yes	N/A	<p>Majority of the acres within this allotment, KA-2 and SMU8 has the frequency, diversity, density, age classes and productivity of desired native species necessary to ensure reproductive capability and survival. However in KA-3 and SMU67 the amount of perennial grasses has been significantly reduce within these sites, but is still have the ability necessary to ensure reproductive capability and survival.</p> <p><u>Indicator: Functional/structural groups</u></p> <p>This soil type and vegetation type makes up majority of the allotment. KA-2 showed slightly to moderately fewer shrubs than what is expected at the site, but the shrubs are still the dominant group and grasses are still the sub-dominant group. There is good diversity of shrubs and grass species.</p> <p>SMU8 showed a moderate reduction in plants. The dominant plant group grasses are starting to be replaced by annual cheatgrass. The sub-dominant plant group shrubs are reduced from what is expected for the site. There is good diversity of shrubs and grass species. This site is approximately 100 acres which is considered a minor component of the allotment.</p> <p>KA-3 and SMU67 the perennial grass has moved from dominant species to sub-dominant plant species and cheatgrass has become a common species on these sites. The amount of perennial grasses has been significantly reduced throughout these sites. Shrubs are still the sub-dominant plant group and matches what is expected for these sites. There is still good diversity of perennial plant species. These sites represent approximately 280 acres which is considered a minor component of the allotment. KA-3 and SMU67 showed the diversity, age class capability and survival of the plants present, but the frequency of perennial grasses is not what is expected for these sites. The sagebrush at these sites receives moderate to heavy use from deer each year. The shrub component is very important to the wintering deer herd within this area. At the present time shrubs matches what is expected for these sites.</p> <p><u>Indicator: Plant mortality and/or decadence</u></p> <p>There is very little mortality or decadence within KA-2, SMU8 and SMU67. The plants were meeting the mortality and decadence (less than 10%).</p> <p>There are approximately 20 to 30 percent of the Wyoming sagebrush plants that are decadence or having mortality within KA-3. There is plant</p>

			<p>recruitment on all plants species within these four sites.</p> <p><u>Indicator: Annual Production</u></p> <p>Annual production is what is expected for KA-2 and SMU67.</p> <p>Annual production is reduced for KA-3 due to the reduction of grasses and sagebrush within this site. Production in a normal year is approximately 975 lbs. /acre and it is estimated at this site production is reduced to 60% which is approximately 585 lbs. /acre.</p> <p>Annual production is reduced for SMU8 due to the reduction of grasses and shrubs within this site. Production in a normal year is approximately 975 lbs. /acre and it is estimated at this site production is reduced to 70% which is approximately 683 lbs. /acre.</p> <p><u>Indicator: Invasive/Noxious weeds</u></p> <p>KA-2 showed moderately change from what is expected at this site, with cheatgrass being scattered throughout the area.</p> <p>KA-3, SMU8 and SMU67 showed a moderately to extreme change from what is expected at these sites, with cheatgrass being common throughout the area.</p> <p><u>Indicator: Reproductive Capability of perennial plants</u></p> <p>All vegetation is capable of producing seed and recruitment of young plants is occurring within KA-2 and SMU67. These sites have a good even age class (old, mature, and young plants).</p> <p>Within KA-3 and SMU8 there is a slight reduction in reproduction in grasses and shrubs. All vegetation is capable of producing seed and recruitment of young plants is occurring at these sites. These sites have a good even age class (old, mature, and young plants).</p>
b) Habitats connected at a level to enhance species survival.	Yes	N/A	<p>Within this allotment there are no restrictive barriers that may impede wildlife movement. There are two main county roads that are maintained yearly which includes county road 109 and 350 which have approximately 6 miles. These county roads receive recreational use throughout the year and are used at low speed. There are many non-maintained jeep roads that traverse throughout the allotment but these roads receive low use and low speed. Traffic may alter some wildlife movement but this would be very temporary and short term.</p> <p>There are approximately 5¼ miles of boundary line fences which were installed in the 1970's and 1980's which the barbed wire is less than 38 inches high. Deer and elk pass over these fences with minimal issues and there has been no evidence of any deer or elk mortality along these fence lines. This area is used as winter range by deer and a few elk so fawns and calves are large enough to jump the fences when they move into this</p>

			<p>county. There are no migration routes through this area.</p> <p>The habitats on the allotment are connected at a level to allow for spread of native vegetation and survival of key species from site to site.</p>
<p>c) Native species re-occupy habitat niches and voids caused by disturbances unless management objectives call for introduction or maintenance of non-native species.</p>	Yes	N/A	<p>Used indicators are Functional/Structural groups, invasive/noxious weeds and line point intercept data. Functional/Structural groups was used to help determine if the DPC is able to re-establish after disturbances (mainly drought), invasive/noxious weeds was used to help determine how far weeds have established at each site and the line point intercept data was used to help determine the amount and type of vegetation found at each site.</p> <p>KA-2 shows a plant community that closely matches what is expected with the exception of the non-native cheatgrass being present. This suggests that the native species are not fully establishing in the disturbed areas. The native plants are competing with the cheatgrass to fill the vacant niches and voids but are filling them fully. KA-2 represent majority of the acres within the Scharf Mesa Allotment.</p> <p>SMU8 the niche and voids are being filled by cheatgrass and native species, but cheatgrass is competing for space with the native plant species. The plant community is below what is expected. Non-native cheatgrass is common throughout the area.</p> <p>KA-3 and SMU67 the niches and voids are being filled by cheatgrass and natives, but natives are starting to have a hard time competing for space with the non-native cheatgrass. Cheatgrass is common throughout the area.</p> <p>All four sites have a seedbank that is available for the native plants species to re-occupy the niche. It may be difficult for the native grasses to out compete with cheatgrass when it's becoming the dominant species on the site. At the present time cheatgrass is not the dominant species, but is common within KA-3, SMU8 and SMU67 and scattered within KA-2. However within KA-3 and SMU67 the cheatgrass is starting to replace perennial grasses and perennial grasses are becoming a sub-dominant group. The SMU8, SMU67 and KA-3 areas are a minor component of this allotment.</p>
<p>d) Habitats for threatened, endangered, and special-status species managed to provide for recovery and move species toward recovery and move species toward de-listing.</p>	Yes	N/A	<p>The Scharf Mesa allotment contains a variety of habitats for both Federally Listed species and locally important wildlife species. There are no known threatened and endangered and special status plant species on the allotment.</p> <p><u>Federally Listed Species Habitat and Concerns</u></p> <p><u>Mexican Spotted Owl (MSO) (Federal Threatened</u></p> <p>There is suitable MSO habitat above Granite Creek within this allotment. The 1997 Willey-Spotskey MSO habitat model depicts breeding habitat</p>

			<p>and foraging habitat and the 1999 Willey-Spotskey MSO habitat model depicts isolated pixels of breeding habitat on the south side of Granite Creek which is outside this allotment. Occupancy surveys according to USFWS protocol were performed in 2003, 2004, 2012 and 2013. No owls were located and the area may be given the “absence” designation for MSO.</p> <p><u>Southwestern Willow Flycatcher (SWFL)(Federal Endangered)</u></p> <p>Within Scharf Mesa Allotment potential and suitable breeding habitat is abundant along the Dolores River. This allotment offers limited breeding habitat along a short stretch of the Dolores River. This allotment borders the Dolores River for approximately two miles on the south and currently has several patches of non-continuous suitable breeding habitat consisting mainly of tamarisk. The tamarisk is showing the effects of the tamarisk leaf beetle and the habitat quality is being reduced to the point of non-habitat. This portion of the river was protocol surveys done in 2005 by Mat Johnson with USGS and SWFL migrants were detected approximately 2 miles to the west of the southern border of this allotment.</p> <p><u>Jones Cycladenia (Threatened Plant Species)</u></p> <p>Jones Cycladenia Model show potential habitat within the Scharf Mesa Allotment. At the present time there are no known populations of Jones Cycladenia within the Scharf Mesa Allotment. There are approximately 80 acres of low (3%) potential habitat, 160 acres of lower (5%) potential habitat, 1,288 acres of medium low (34%) potential habitat, 1,000 medium high (21%) potential habitat and 3,962 acres of Highest (38%) potential habitat ratings. The highest (38%) potential habitat has 2,197 acres that are inaccessible to cattle grazing due to the steep slopes, rough terrain, low cattle forage, and no water. There was no evidence of cattle use. However there was additional 1,765 acres that was accessible to cattle grazing. These acres have four dirt ponds and one developed spring. BLM surveyed 1,765 acres in 2016 and found no plants. There was 1,000 acres in medium high (21%) potential habitat which were inaccessible to cattle grazing due to very rough terrain, many small canyons with steep slopes and high density of juniper and pinyon pine. There was no evidence of cattle use within these acres. No acres were surveyed due to the inaccessibility of these acres to cattle grazing. There is 1,027 acres of medium low (34%) potential habitat that are inaccessible for cattle grazing due to the terrain that is very rough and steep slopes. There is no evidence of cattle grazing within these acres. There is additional 213 acres that are accessible to cattle grazing and BLM surveyed all these acres and no plants were found. There is 160 acres of lower (5%) potential habitat which was inaccessible to cattle grazing due to the terrain is very rough and steep slope. No survey was done due to the inaccessibility of these acres to cattle grazing. There is 80 acres of low (3%) potential habitat these acres have rough terrain, but there is a small portion of it is flat. These acres are inaccessible to cattle grazing due to cliff and steep slopes next to the river bank. The potential for Jones's Cycladenia to occur in these acres are very low.</p>
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Utah BLM Sensitive Species:

There is potential habitat for the Townsend's big-eared bats, spotted bats, Allen's big-eared bat and Fringed myotis based on the Utah Natural Heritage database. There could also be bald eagle to occupy this area, but there is no known occurrence. The special status fish species and habitats (Bluehead sucker, Roundtail chub and flannel-mouth sucker) are present within the Dolores River which is adjacent to this allotment.

Special Status Species in Utah with Potential Habitat within Scharf Mesa Grazing Allotment

Common Name	Scientific Name	Status	Critical Habitat
<i>BIRDS</i>			
Bald eagle	<i>Haliaeetus leucocephalus</i>	Utah State Sensitive	No
<i>FISH</i>			
Bluehead sucker	<i>Catostomus discobolus</i>	Utah State Sensitive	No
Roundtail club	<i>Gila robusta</i>	Utah State Sensitive	No
Flannelmouth sucker	<i>Catostomus latipinnis</i>	Utah State Sensitive	No
<i>MAMMALS</i>			
Allen's big-eared bat	<i>Idionycteris phyllotis</i>	Utah State Sensitive	No
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	Utah State Sensitive	No
Fringed myotis	<i>Myotis thysanodes</i>	Utah State Sensitive	No
Spotted bat	<i>Euderma maculatum</i>	Utah State Sensitive	No

Migratory Birds

The Migratory Bird Treaty Act, as amended, was promulgated for the protection of migratory birds. All raptors observed in Utah are protected by the Migratory Bird Treaty Act and some birds are also protected by the Endangered Species Act (ESA), the Bald and Golden Eagle Protection Act, and/or are included in the Utah Natural Heritage Program Species of Greatest conservation Need (UDWR, 2005). The draft Memorandum of Understanding between the Forest Service, the BLM and USFWS provides direction for the management of migratory birds to promote their conservation (FWS, 2002e). The direction includes identifying species listed in the FWS Birds of Conservation Concern (BCC) that are likely to be present in the area of a proposed action. The

Utah Partners in Flight (UPIF) working group completed a statewide avian conservation strategy identifying “priority species” for conservation due to declining abundance distribution, or vulnerability to various local and/or range-wide risk factors. One application of the strategy and priority list is to give these birds specific consideration when analyzing effects of proposed management actions and to implement recommended conservation measures where appropriate. The UPIF Priority Species List and the Utah Conservation Data Center database were used to identify potential habitat for priority species that could utilize habitat within the project area. Potential habitat and species are listed below.

Utah Partners in Flight Priority Species			
Bird Name	DWR Habitat Value**	Breeding Habitat Type*	Winter Habitat*
Brewer Sparrow*	Critical/High	Shrubsteppe	Migrant
Bald Eagle*	Winter	Lowland Riparian	Lowland Riparian
Pinyon Jay	Critical/High	Pinyon-Juniper	Pinyon-Juniper
Black-throated Gray Warble	Prime Breeding	Pinyon/Juniper	Migrant
Broad-tailed Hummingbird	Critical/Substantial	Lowland Riparian	Migrant
Burrowing Owl*	Primary Breeding	High Desert Scrub	Migrant
Gambel’s Quail	High	Low Desert Scrub	Low Desert Scrub
Golden Eagle	Critical/High	Cliff	High Desert Scrub
Gray Vireo	Prime Breeding/Winter	Pinyon/Juniper	Migrant
Juniper Titmouse	Critical/High	Pinyon/Juniper	Pinyon/Juniper
Peregrine Falcon	Critical	Cliff	Wetlands
Prairie Falcon	Critical/High	Cliff	Agriculture
Sage Sparrow	Critical	Shrubsteppe	Low Desert Scrub
<i>Southwestern Willow Flycatcher</i>	Local Migrant	-----	-----
Virginia’s Warbler	Prime Breeding/Winter	Oakbrush	Migrant
<i>Yellow-billed Cuckoo</i>	Not Known	Lowland Riparian	Migrant

*Utah Partners in Flight Avian Conservation Strategy Version 2.0

			<p><i>**Utah Conservation Data Center</i></p> <p><u>Big Game Species</u></p> <p>There is crucial winter range for deer within the Scharf Mesa Allotment. This allotment has a lot of deer that winters during November through April and there are a few elk that winters during November to March.</p> <p><u>Other Wildlife</u></p> <p>The plant communities, riparian, riverine habitats and topography in this allotment would provide habitat for various small mammals, songbirds, snakes, lizards and raptors species. Predator such as cougar, coyote, bobcat and fox can also be found here. The most commonly observed species include gopher snakes, antelope ground squirrels, cottontail rabbits, blacktailed jackrabbits, coyotes, mourning doves, horned larks, golden eagles, redtailed hawks and ravens. The Dolores River contains adequate or consistent flows to support warm water fishery potentials.</p>
e) Appropriate amount, type, and distribution of vegetation reflecting the presence of (1) the desired plant community (DPC), where identified in a land use plan, conforming to these standards or (2) where the DPC is not identified, a plant community that equally sustains the desired level of productivity and properly functioning ecological conditions.	Yes	N/A	<p><u>Indicator: Functional/structural groups</u></p> <p>KA-2 upland site visited during the 2009 field assessment shows the appropriate amount, type, and distribution of vegetation that reflects the desired plant communities (DPC). This site is in Properly Functioning Condition (PFC) with the current ecological conditions. Long term trend is slightly upward and apparent trend is up. This soil type and vegetation type makes up majority of the allotment. KA-2 showed slightly fewer shrubs than what was expected at the site, but the shrubs are still the dominant group and grasses are still the sub-dominant group. There is good diversity of shrubs and grass species. All the plants have good vigor within this area.</p> <p>SMU8 show a plant community capable of being equally sustainable to the DPC with the exception of cheatgrass being more prominent. Cheatgrass has the potential to change ecological conditions;</p> <ul style="list-style-type: none"> • The hydrological process is changed due to the growth of the plant. Cheatgrass begins growing in the fall and even when snow is on the ground, this allows for the plant to grow and develop rapidly during the spring months. This reduces the amount of water that would have infiltrated into the ground. • Nutrient cycling is changed, the grass uses up nutrients relatively fast during the growing season. Nutrients like nitrogen and phosphorus are typically the limiting factor to the growth of plants. This makes the nutrients less available to native plants. <p>Within SMU8 site annual cheatgrass is starting to replace the dominant plant group perennial grasses on this site. However, the diversity of perennial plants species are good for this area and there is recruitment of</p>

			<p>young perennial grasses. The sub-dominant plant group shrubs are reduced from what is expected for this site. All the plants have good vigor within this area. This community still has the ability to compete with the annual cheatgrass. This site has approximately 100 acres which is considered a minor component of this allotment.</p> <p>KA-3 and SMU67 do not show the appropriate amount, type, and distribution of the DPC. These sites appear to be changing from dominant perennial grasses to common non-native cheatgrass. The amount of perennial grasses has been significantly reduced throughout these sites. Shrubs are still the sub-dominant plant group and matches what is expected for these sites. These sites have good diversity of perennial plant species. KA-3 and SMU67 showed the diversity, age class capability and survival of the plants present. These sites are functioning-at-risk (FAR) with the current ecological conditions. The sagebrush at this site receives moderate to heavy use from deer each year. The shrub component is very important to the wintering deer herd within this area. At the present time shrubs matches what is expected for these sites. Even though the cheatgrass is present the native plants are competing for the resources and helping to sustain the ecosystem. The reduction or apparent loss of native perennials is more than likely a result of drought conditions coupled with moderate to heavy use by deer on the Wyoming sagebrush during the winter months. All the plants have good vigor within these plant communities throughout this allotment. These two sites represent approximately 280 acres which is considered a minor component of this allotment. The apparent trend is upward and long term trend studies shows KA-3 has an static (trend studies read in 2012)</p> <p><u>Indicator: Plant mortality and/or decadence</u></p> <p>There is very little mortality or decadence within KA-2, SMU8 and SMU67. These sites have good even age class (old, mature and young plants). These sites have low mortality and decadence plants less than 10%.</p> <p>KA-3 has approximately 20 to 30 percent of the Wyoming sagebrush plants that are decadence or having mortality.</p> <p>There is plant recruitment on all plants species within these four sites.</p> <p><u>Indicator: Annual Production</u></p> <p>Annual production is what is expected for KA-2 and SMU67.</p> <p>Annual production is reduced for KA-3 due to the reduction of grasses and sagebrush within this site. Production in a normal year is approximately 975 lbs. /acre and it is estimated at this site production is reduced to 60% which is approximately 585 lbs. /acre.</p> <p>Annual production is reduced for SMU8 due to the reduction of grasses and shrubs within this site. Production in a normal year is approximately</p>
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			<p>975 lbs. /acre and it is estimated at this site production is reduced to 70% which is approximately 683 lbs. /acre.</p> <p><u>Indicator: Invasive/Noxious weeds</u></p> <p>KA-2 showed moderately change from what is expected at this site, with cheatgrass being scattered throughout the area.</p> <p>KA-3, SMU8 and SMU67 showed a moderately to extreme change from what is expected at these sites, with cheatgrass being common throughout the area.</p> <p><u>Indicator: Reproductive Capability of perennial plants</u></p> <p>All vegetation is capable of producing seed and recruitment of young plants is occurring within KA-2 and SMU67. These sites have a good even age class (old, mature, and young plants).</p> <p>Within KA-3 and SMU8 there is a slight reduction in reproduction in grasses and shrubs. All vegetation is capable of producing seed and recruitment of young plants is occurring at these sites. These sites have a good even age class (old, mature, and young plants).</p>
<p>#4 Clean Water</p> <p>BLM will apply and comply with water quality standards established by the State of Utah (R.317.2) and the Federal clean Water and Safe Drinking Water Acts. Activities on BLM lands will fully support the designated beneficial uses described in the Utah Water Quality Standards (R.317-2) for surface and ground water.</p>	Yes	N/A	<p>Utah Rangeland Health Standard #4 requires “BLM will apply and comply with water quality standards established by the State of Utah (R.317-2) and the Federal Clean Water and Safe Drinking Water Acts. Activities on BLM lands will fully support the designated beneficial uses described in the Utah Water quality Standards (R.317-2) for surface and ground water”. As indicated by:</p> <ul style="list-style-type: none"> A) Measurement of nutrient loads, total dissolved solids, chemical constituents, fecal coliform, water temperature and other water quality parameters. B) Macro invertebrate communities that indicate water quality meets aquatic objectives. <p>Utah water quality standards do not apply to ephemeral drainages and the associated storm runoff flows.</p> <p><u>Dolores River:</u></p> <p>There is water quality data available for the Dolores River, measure adjacent to the allotment. The State of Utah monitors water quality just upstream of the confluence with the Colorado River on a frequent basis.</p> <p>The Dolores River and its tributaries (except Granite Creek) are on the List of Impaired Waters, 2008, submitted to EPA in May, 2008. The pollutants are identified as salinity, total dissolved solids and chlorides. No report (TMDL) has been initiated to date on this situation. When recommendations from the state are developed, BLM will follow all recommendations that apply. These recommendations may include</p>

			<p>improvements to the riparian conditions along the Dolores River corridor.</p> <p>Since a detailed analysis of the watersheds and related water quality data has not been completed to date, we do not know how much (if at all) the Scharf Mesa Allotment is contributing to poor water quality conditions. Soils, floodplains and riparian resources in the allotment are in stable to good condition. This would not contribute to poor water quality conditions in either the Colorado River or the Dolores River.</p> <p>There are two riparian areas which are the Dolores River and Buckhorn Spring which are Properly Functioning Condition (PFC). There is no water quality data available for the Buckhorn Spring.</p> <p>Based on the perennial water in the Scharf Mesa Allotment we have concluded that it is meeting Utah Rangeland Health Standard #4.</p>

RANGELAND HEALTH DETERMINATION

Causal Factors

For those Standards not being met, identify the causal factors and the evidence used to reach a conclusion regarding causal factors:

Standard #1:

Causal Factor(s): N/A

Evidence Used:

Quantitative methods used were:

Two quantitative methods were used to assess the vegetation and ground cover: 1) density and 2) line point intercept. Density of key species was sampled at two key areas and two SMU sites within the allotment. Line point intercept was used to collect cover data at all sites (4 sites). Ground cover was calculated as a percentage for each cover class of interest. Soil Stability was also recorded at all sites (4 sites) using the soil stability test kit.

Qualitative methods used were:

Repeat photographs as well as ancillary photographs and visual assessments.

Standard #2:

Causal Factor(s): N/A

Evidence Used:

Qualitative methods used were:

There are two riparian areas within Scharf Mesa Allotment which are Dolores River and Buckhorn Spring. Riparian assessment of Proper Functioning Condition (PFC) was conducted in 2009 for Dolores River and in 2010 for the Buckhorn Spring. These riparian areas are at PFC. Repeat photographs as well as visual assessments were done.

Standard #3:

Causal Factor(s): N/A

Discussion:

With few exceptions, study data suggest that range conditions are at an acceptable level, trend is static to upward, and overall present management is resulting in changes towards most management objectives for vegetation and soils. The evaluation also indicates that there has been an insect infestation that may seriously jeopardizing the health of shadscale plants in the future and BLM decided to continue to closely monitor this situation. This indicates that the livestock management strategy is adequate. Utilization levels have been within an acceptable range which was slight to light use on majority of the plants and moderate to heavy use on Wyoming sagebrush by the deer during the winter months. The allotment had been experiencing two drought years.

Grazing as a landscape level disturbance can affect the seral states of vegetative communities; however, as climates shift, seral state may also be determined by the frequency, intensity and duration of localized precipitation. During the last eleven years (2004-2015), the average level of grazing use for Scharf Mesa Allotment has been 67 AUMs or 24% of preference. The permittees has taken two years of non-use out of eleven years. There was two drought year which was during 2008-09 and 2011-12. Utilization during this period of time has been slight to moderate use depending on the areas within the allotment except for the Wyoming sagebrush has received moderate to heavy use each year by the deer.

KA-2 and SMU8 sites are Properly Functioning within the Scharf Mesa Allotment; however KA-3 and SMU67 are Functioning-at-Risk with a static trend. The Functioning-at-Risk is due to the increase in cheatgrass which has caused a reduction of perennial grass species within KA-3 and SMU67. KA-3 and SMU67 makes up only 280 acres of the allotment. The intent of this assessment is to identify potential problems occurring on the landscape in relation to grazing and possible other land uses. The Moab Field Office BLM would continue to monitor the allotment for ecological changes and precipitation, and grazing use would be determined and authorized on an annual basis to appropriately reflect management objectives. KA-3 and SMU67 represent a small portion (280 acres) of the allotment which is not meeting this standard. However, overall majority of the Scharf Mesa Allotment is rated as meeting this standard as a result of the 2009, 2010 assessments and update in 2015. The reason why these 280 acres of the allotment is not meeting this standard is due to drought and moderate to heavy use on sagebrush by deer during the winter months. Actual use average was only 24% of the livestock grazing preference and utilization over the years has been only sight to light used with one small area of moderate use.

Evidence Used: Quantitative vegetation data was collected at two key area upland sites. Qualitative data was collected at all sites previously listed as well as ancillary sites SMU 8 and SMU 67. Old photos of key areas sites were also used as qualitative data in this assessment as well as other pertinent allotment records and data (actual use, fire history, wildlife records, etc.).

Quantitative methods used were:

Two quantitative methods were used to assess the vegetation and ground cover: 1) density and 2) line point intercept. Existing density plots were sampled at two key area sites. Line point intercept was used to collect cover data at four sites which includes key areas and ancillary sites. 50 cover points were collected along two 250 ft. long transects at four sites at the end of the growing season. Ground cover was calculated as a percentage for each cover class of interest. Soil Stability was also recorded at four sites using the soil stability test kit.

Qualitative methods used were:

Ancillary photographs, visual assessments and other data were used in this determination.

Standard #4:

Causal Factor(s): N/A

The Moab Field Office BLM would continue to monitor the streams, riparian areas and precipitation.

Evidence Used: Water samples on the Dolores River were taken within this allotment and were analyzed general chemistry.

Quantitative methods used were:

There is one perennial water source within Scharf Mesa Allotment which is the Dolores River and one intermittent stream which is Buckhorn Spring. Water samples were taken on the Dolores River, but at the present time there is no water sampling on the Buckhorn Spring. Riparian assessment of PFC was conducted in 2009 and 2010.

Grazing Management Questions:

- 1) Is it more likely than not that existing grazing management practices or levels of grazing use are significant factors in failing to achieve the Standard or conform to the guidelines?

_____ **Yes** X **No**

Rationale: The vegetative communities in the uplands are meeting rangeland health standards. There are two small soil types or areas on the allotment that was not meeting the standard #3; KA-3 and SMU67 represents only 3% or 280 acres of the allotment. It is not clear the causal factor or if livestock grazing has caused these 280 acres not meeting this standard #3. There was two drought year (2008-09 and 2011-12) and moderate to heavy use on sagebrush by the deer herds in most years which maybe reasons why these areas did not met this standard #3. The vast majority of the allotment is meeting rangeland health standards. There are no areas that are improperly functioning within this allotment. At the present time the season of use is winter and early spring (March) which would allow the critical spring months of April and May to be rested. The actual use shows that grazing has been below the current active AUMs for the allotment and utilization has been at appropriate levels except for the Wyoming sagebrush is being used moderate to heavy each year by the deer herd.

- 2) It is more likely than not that existing grazing management needs to be modified to ensure that the Fundamentals of rangeland health are met or making significant progress toward being met?

_____ **Yes** X **No**

Rationale: The current season of use and animal unit months (AUMs) are not showing cause for the uplands not to be meeting rangeland health standards. During the assessment of 2009 and the update data of 2015 the allotment was meeting rangeland health standards. The existing permit authorizes cattle within the Scharf Mesa Allotment during winter and early spring month (March). The existing season of use should remain the same and allow for late spring rest. The long term trend studies was last read in 2012 which show static to upward trend within the uplands. The livestock use average has only been 24% of the grazing preference and utilization has been slight to light use depending on the year and with a few small areas of moderate use within this allotment. There has been two years of non-use that have occurred during

this period of time. Dolores River riparian area is showing an upward trend and Buckhorn Spring riparian area trend is not apparent at the present time. Both riparian areas have meet PFC.

Conformance with Guidelines for Grazing Management

Existing grazing management X **Conforms with** does not conform with Utah's Guidelines for Grazing Management.

Guidelines not currently being followed are: N/A

Determination Summary

Based on my review of the Assessment Team's recommendation, Evaluation of Rangeland Health Standards and other relevant information, and as indicated in this document I have determined that the Allotment.

 X **Meets**

 Fails to Meet but is making progress toward meeting

 Fails to Meet and is not making significant progress toward meeting

Utah's Standards for Rangeland Health and that current grazing practices

 X **are** in conformance with Utah's Guidelines for Grazing Management

 are not in conformance with Utah's Guidelines for Grazing Management.

I have also determined that livestock grazing management practices:

 X **are not** the primary factor in failing to achieve the standards.

 are the primary factor in failing to achieve the standards.

RANGELAND HEALTH EVALUATION

Site/Area: Hotel Mesa Allotment

BLM Acres: 2,642

2009 Dates of Range Assessments/Visits: August 11, 2009 and data was updated in 2015

Date of Determination Summary: October 1, 2010

Rangeland health assessments were conducted on the allotment during the summer of 2009. The 17 Indicators of Rangeland Health were used to determine the health of the allotment. The indicators are primarily qualitative assessment with several areas that are quantitative, which focuses on individual indicators and later combines several indicators to help in assessing the soils, hydrology, and vegetation.

Assessment sites were selected using soil map units (SMU). Each SMU may contain several different ecological sites, which are different in vegetation composition, soil type, and texture.

Monitoring sites were established within several representative ecological sites. The monitoring sites are called key areas (KA). Key Areas have long term trend, apparent trend, and utilization completed for 12+ years and tracked the changes in vegetation at the sites. This information is used to help determine how much disturbance livestock has on the vegetation. In 2012 base line frequency trend studies and line intercept studies was setup to replace the old density studies within this allotment. Riparian assessments were conducted using proper functioning condition methodology.

The assessments were conducted on SMUs 11, 57 and 71 (for SMU descriptions refer to the USDA, Soil Survey of Canyonlands Area, Utah, Parts of Grand and San Juan Counties, 1991). The assessments are named KA3 (SMU11) (Bluechief fine sandy loam), SMU 57 (Moenkopie-Rock outcrop complex), and SMU 71 (Rizno, dry-Rock outcrop complex). These SMUs and KA represents majority of the BLM acres within this allotment.

The Hotel Mesa Allotment is located approximately 17 to 19 air miles northeast of Moab, Utah. This allotment is within Grand County in the State of Utah within the Dolores Triangle Area.

Compliance with Rangeland Health Standards:

The following list shows the acreage in the allotment and the current active federal cattle AUMs within the allotment:

Allotment Name and Number	Livestock			Active Permitted Use (AUMs)	Acres	Land Status
	No.	Kind	Season of Use			
Hotel Mesa 05850	44	Cattle	01/01 to04/30	174	2,642 422	BLM Private

Standard	Standard Met?	Progress Towards Meeting?	Rationale: (Summarize the evidence and indicators used to reach conclusions regarding meeting, not meeting and the progress towards meeting each Standard.)
#1 Upland Soils	Yes	N/A	
a) Sufficient cover and litter to protect the soil surface from excessive water and wind erosion, promote infiltration, detain surface flow, and retard soil moisture loss by evaporation.	Yes	N/A	<p>All upland sites visited within this allotment during the field assessments exhibited sufficient cover which includes biological soil crust, rock cover, vegetation cover and litter relative to site potential to protect the soil from excess erosion from wind and water. The soil stability test that was done on all sites showing the soil has good resistance to soil erosion. Erosion does not exceed what would be expected for the natural potential of these sites. Some of the allotment landscape is naturally erosive due to abiotic factors such as the existing geology and soils types, as well as geo-morphological characteristics</p> <p>No indications of wind scouring and excessive deposition were apparent at these sites. There has been some change in infiltration due to the increase in the amount of cheatgrass within sites KA-3 and SMU 57. At the present time the amount of cheatgrass has caused minor changes in the perennial plant species within these sites. There is no compaction layers found at any of these sites. It should be noted that at KA-3 cheatgrass is common throughout the site, which is increasing the amount of fine litter and reducing the amount of bare ground on this site. The majority of the water is leaving the site as expected for these soil types and characteristic vegetative community. There are no major problems with erosion within the drainages of evaluation areas. A majority of the soils are fine sandy loam or gravelly fine sandy loam textured. During periods of heavy precipitation, water is retained within the pores spaces of the soils evaluated. Saturation can occur and remaining water will leave the sites as overland flow.</p> <p>Generally, soil moisture loss through surface evaporation can be directly correlated to the percentage of bare ground. Therefore, direct soil moisture loss at the soil surface has not increased at the three upland sites due to annual inputs of herbaceous vegetative cover, amount of rock cover, biological soil crust and litter in relation to ecological potential; however, soil moisture may be depleted in the top horizons during the spring months due to rapid growth of annual species, such as cheatgrass (<i>Bromus tectorum</i>) that is common at KA-3.</p>
b) The absence of indicators of excessive erosion such as rills, soil pedestals, and actively eroding gullies.	Yes	N/A	All upland sites visited showed absence of the indicators of excessive water erosion; no rills were identified at the sites, no active pedestaling or terracelles, and no actively eroding gullies were present.

c) The appropriate amount, type, and distribution of vegetation reflecting the presence of (1) the desired plant community (DPC), where identified in a land use plan, conforming to these Standards or (2) where the DPC is not identified, a plant community that equally sustains the desired level of productivity and properly functioning ecological conditions.	Yes	N/A	All upland sites visited has the desired plant communities identified in the land use plan and ecological site description found on the NRCS data base. These communities are functioning to a desired level of productivity and ecological conditions (the absence of excessive erosion and loss of DPC vegetation).
Other Issues within this allotment	None		
#2 Riparian	Yes	N/A	<p>Riparian areas were assessed using the “Riparian Area Management (TR 1737-15 1998). A User Guide to Assessing Proper Functioning Condition (PFC) and the Supporting Science for Lotic Areas”. PFC assesses three separate categories of riparian areas, hydrology, vegetation, and erosion/deposition.</p> <p>An interdisciplinary team visited two sites within the allotment. One site was assessed along the Dolores River up river from the confluence of the Dolores River and the Colorado River in T.23S. R.24E. Section 8 and 9. The second site was assessed along the Colorado River in T.23S. R.24E. Section 5 and 8.</p> <p>The Dolores and Colorado Rivers are perennial. Other washes throughout the allotment are typical entrenched ephemeral desert washes. At the present time Dolores and Colorado Rivers are Properly Functioning Condition (PFC) with an upward trend within this allotment.</p>
a) Streambank vegetation consisting of, or showing a trend toward, species with root masses capable of withstanding high streamflow events. Vegetative cover adequate to protect stream banks and dissipate stream blow energy associated with high-water flows, protect against	Yes	N/A	<p><u>Dolores River:</u> The present vegetation within the Dolores River riparian area relation to the abiotic and biotic characteristics of the landscape (natural potential) is adequate to capture sediment, protect against accelerated erosion and provide for ground water discharge. Exotic tamarisk trees are common within portions of the riparian segment, but contribute to dewatering of shallow ground water, as well as compete for resources with native vegetation. Riparian vegetation (cottonwood tree, tamarisk trees, coyote willows, yellow willow, phragmites, rushes and salt grass) has root masses capable of withstanding high stream flow events. The riparian area has not achieved potential extent yet, but the trend is upward. The McPhee Reservoir upstream in Colorado helps control the amount of water within the Dolores River. However there is flooding that occurs during the spring run-off season. At the present time</p>

accelerated erosion, capture sediment, and provide for groundwater recharge.			<p>this riparian area is Properly Functioning Condition (PFC) and is in an upward trend.</p> <p><u>Colorado River:</u> The present vegetation within the Colorado River riparian area relation to the abiotic and biotic characteristics of the landscape (natural potential) is adequate to capture sediment, protect against accelerated erosion and provide for ground water discharge. Exotic tamarisk trees are common within portions of the riparian segment, but contribute to dewatering of shallow ground water, as well as compete for resources with native vegetation. Riparian vegetation (cottonwood tree, tamarisk trees, coyote willows, yellow willow, salt grass, bull rushes and other rushes) has root masses capable of withstanding high stream flow events. There are a few small areas of cut banks especially on corners and by the dense stands of tamarisk. The riparian area has not achieved potential extent yet. Dams upstream in Colorado have changed stream flow patterns; reduce sediment load and peak flows. However there is flooding that occurs during the spring run-off season. At the present time this riparian area is Properly Functioning Condition (PFC) and is in an upward trend.</p>
b) Vegetation reflecting: DPC maintenance of riparian and wetland soil moisture characteristics, diverse age structure and composition, high vigor, large woody debris when site potential allows, and providing food, cover, and other habitat needs for dependent animal species.	Yes	N/A	<p><u>Dolores River:</u> This riparian area is along a major river in Utah and the vegetation is made of coyote willows, yellow willows, tamarisk trees, phragmites, cottonwood trees, rushes and salt grass</p> <p>The vegetative community for the Dolores River riparian area provide for adequate species diversity; proper age class distribution; or maintenance of riparian and wetland soil moisture characteristics. All riparian plant species show high plant vigor, except for the tamarisk trees has low vigor due to a tamarisk leaf beetle which was introduced by the State of Utah.</p> <p>This riparian area is meeting the habitat needs of local wildlife and migratory birds. This riparian area contains breeding and nesting habitat for the SWFL. There have been numerous migrant SWFL detections along the Dolores River adjacent to this allotment.</p> <p><u>Colorado River:</u> This riparian area is along a major river in Utah and the vegetation is made of coyote willows, yellow willows, tamarisk trees, salt grass, cottonwood trees, bull rushes and other rushes.</p> <p>The vegetative community for the Colorado River riparian area provide for adequate species diversity; proper age class distribution; or maintenance of riparian and wetland soil moisture characteristics. All riparian plant species show high plant vigor, except for the tamarisk trees has low vigor due to a tamarisk leaf beetle which was introduced by the State of Utah.</p> <p>This riparian area is meeting the habitat needs of local wildlife and migratory birds. This riparian area contains breeding and nesting habitat for the SWFL. There have been numerous migrant SWFL detections along the Dolores River at the confluences with the Colorado River</p>

			adjacent to this allotment.
c) Revegetating point bars; lateral stream movement associated with natural sinuosity; channel width, depth, pool frequency and roughness appropriate to landscape position.	Yes	N/A	<p><u>Dolores River:</u> Majority of the point bars have vegetation and becoming stabilized. The vegetation is capturing recent deposition on point bars and maintaining this balance during high flow periods. However, there are still a few point bars with less riparian vegetation, but are starting to re-vegetate on these areas.</p> <p>This site is in balance with the natural ecosystem and lateral stream movement associated with the natural sinuosity is in balance with the confinement of the canyon. The system is vertically stable with some bank cutting that is occurring, but no head cutting. The bank cutting sites are showing signs of healing.</p> <p><u>Colorado River:</u> Majority of the point bars have vegetation and becoming stabilized. The vegetation is capturing recent deposition on point bars and maintaining this balance during high flow periods.</p> <p>This site is in balance with the natural ecosystem and lateral stream movement associated with the natural sinuosity is in balance with the confinement of the canyon. The system is vertically stable with some bank cutting that is occurring, but no head cutting. There are signs of erosion at the bank cutting sites especially near dense stands of tamarisk and on bends in the river. The Dolores Triangle side of the river has very few bad erosion spots, but the west side of the river has more. The banks are healing with willows and rushes where the tamarisk trees are dying back.</p>
d) Active floodplain	Yes	N/A	<u>Dolores River and Colorado River:</u> Floodplain and channel characteristics (i.e., rocks, overflow channels, coarse and/or large woody material) are adequate to dissipate energy. During the spring run-off (snow melt) is when the floodplain become active. However, the dams upstream in Colorado control the major flooding events except for the spring time.
#3 Biotic Component: Desired Plant, Wildlife Species, Special Status Species and Habitats	Yes	N/A	Indicators of Rangeland Health, long term trend monitoring data and wildlife movements: 12) Functional/structural groups, 13) Plant mortality and decadence, 15) Annual production, 16) Invasive/noxious weeds and 17) Reproductive capability of perennial plants
a) Frequency, diversity, density, age classes, and productivity of desired native species necessary to ensure reproductive capability and survival.	Yes	N/A	The KA-3, SMU 57 and SMU 71 showed the appropriate frequency, diversity, density, age class, and production that is necessary for the future reproduction and sustainability of the rangeland. These sites had a good even age class (old, mature, and young plants). The stands have low mortality and decadence plants (less than 10%) within this allotment. These sites were also qualitatively assessed as meeting the expected reproductive capability of the perennial plants.

b) Habitats connected at a level to enhance species survival.	Yes	N/A	<p>Within this allotment there are no restrictive barriers that may impede wildlife movement. There are many non-maintained jeep roads that traverse throughout the allotment but these roads receive low use and low speed. Traffic may alter some wildlife movement but this would be very temporary and short term.</p> <p>There are approximately 2½ miles of boundary line fences which were installed in the 1970's which the barbed wire is less than 38 inches high. Deer pass over this fence with minimal issues and there has been no evidence of any deer or elk mortality along this fence line. There is a few deer used the river bottoms year round. There are no migration routes through this area.</p> <p>The habitats on the allotment are connected at a level to allow for spread of native vegetation and survival of key species from site to site.</p>
c) Native species re-occupy habitat niches and voids caused by disturbances unless management objectives call for introduction or maintenance of non-native species.	Yes	N/A	<p>SMU 71 shows a desired plant community one that is equally sustainable with little to no weedy species present. This site showed that the native plant community has sufficient vigor to re-establish disturbed areas filling the niches and voids left after a disturbance.</p> <p>SMU 57 shows a plant community that closely matches what is expected with the exception of the non-native cheatgrass being present. This suggests that the native species are not fully establishing in the disturbed areas. The native plants are competing with the cheatgrass to fill the vacant niches and voids but are not filling them fully.</p> <p>At KA-3 the niches and voids are being filled by cheatgrass and native species, but cheatgrass is competing for space with the native plant species. The plant community still closely matches what is expected with the exception of the non-native cheatgrass has been established throughout the area.</p> <p>The seedbank is available for the native plant species to re-occupy the niches. It may be difficult for the native shrubs and grasses to out compete with the non-native cheatgrass when it becomes the dominant species on site. At the present time cheatgrass is not the dominant species within this allotment.</p>
d) Habitats for threatened, endangered, and special-status species managed to provide for recovery and move species toward recovery and move species toward de-listing.	Yes	N/A	<p>The Hotel Mesa Allotment contains a variety of habitats for both Federally Listed species and locally important wildlife species. There are no known threatened and endangered and special status plant species on the allotment.</p> <p><u>Federally Listed Species Habitats and Concerns</u></p> <p><u>Southwestern Willow Flycatcher (SWFL)(Federal Endangered Species)</u></p> <p>Colorado and Dolores Rivers contain migratory and suitable breeding/nesting habitats. SWFL habitat evaluation was conducted in various locations from 2003 through 2006 by Mat Johnson and Bill</p>

			<p>Sloan, NPS and the UDWR have located migrant SWFLs in all years. This area is considered excellent breeding habitat.</p> <p><u>Yellow-billed Cuckoo (YBC)</u></p> <p>The Western Yellow-billed cuckoo (YBCU) is associated with cottonwoods and riparian cover, which provides nesting and brood-rearing habitat. Cuckoos are obligate riparian nesters and are restricted to more mesic habitat along rivers, streams, and other wetlands. The YBC has been recently listed (November 2014) due to loss of riparian habitat from agricultural use, water use, road development and urban development. The MFO contains approximately 860 acres of designated critical habitat of which 230 acres are located on federal lands currently proposed by the Service along the Colorado River. No known nesting population of this species exists at the present on federal lands within the MFO, but limited surveys for this species have identified several detections over the past ten years.</p> <p>Adam Petry with Western Biology and in coordination with Southwest Research, Inc. (SWR) preformed habitat suitability evaluations along the Colorado and Dolores rivers that boarder this allotment. It was determined that this allotment may offer some level of migratory habitats. Areas along the Colorado River and at the confluence of the Dolores River, where the USFWS has designated Critical Habitats for the YBCU, may offer limited foraging and nesting habitat within the Hotel Mesa Allotment.</p> <p><u>Jones Cycladenia (Threatened Plant Species)</u></p> <p>Jones Cycladenia Model show potential habitat within the Hotel Mesa Allotment. At the present time there are no known populations of Jones Cycladenia within the Hotel Mesa Allotment. There are approximately 80 acres of low (3%) potential habitat and 596 acres of medium low (34%) potential habitat ratings. There is 596 acres of medium low (34%) potential habitat. These acres has steep slopes and flat mesa tops. All these acres are accessible to cattle grazing. There has been only no-use to slight use depending on the year. BLM surveyed all these acres in 2016 and no plants were found. There is 80 acres of low (3%) potential habitat these acres have rough terrain, but there is a small portion of it is flat. There is small amount of evidence of cattle use within these acres. Since this area is low potential habitat BLM did not survey any acres.</p> <p><u>Endangered Colorado River Fish</u></p> <p>The backwaters of the Colorado River and the confluences of the Dolores and Colorado Rivers provide spawning and nursery habitat for the Endangered fish within this river system. Spawning, post-spawning, incubation, and fry stages of the fish are typically May through August. Critical habitat for the Colorado pikeminnow (<i>Ptychocheilus Lucius</i>), razorback sucker (<i>Xyrauchen texanuse</i>), humpback chub (<i>Gila cypha</i>) and the bonytail chub (<i>Gila elegans</i>) can be found in waters associated with the Colorado River adjacent to this allotment.</p>
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Utah BLM Sensitive Species:

There is a potential habitat for the Townsend's big-eared bats, spotted bats, Allen's big-eared bat and Fringed myotis based on the Utah Natural Heritage database. This allotment has winter and summer forage habitat for bald eagles. This allotment may have potential habitat for Dolores pinkrush at the present time no plants have been found.

Special Status Species in Utah with potential habitat within Hotel Mesa Grazing Allotment

Common Name	Scientific Name	Status	Critical Habitat
MAMMALS			
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	Utah State Sensitive	No
Spotted bat	<i>Euderma maculatum</i>	Utah State Sensitive	No
Allen's big-eared bat	<i>Idionycteris phyllotis</i>	Utah State Sensitive	No
Fringed myotis	<i>Myotis thysanodes</i>	Utah State Sensitive	No
BIRDS			
Bald Eagle	<i>Haliaeetus leucocephalus</i>	Utah Sensitive	No
PLANTS			
Dolores pinkrush	<i>Lygodesmia doloresensis</i>	Utah Sensitive	No
FISH			
Bluehead Sucker	<i>Catostomus discobolus</i>	Utah Sensitive	Yes
Roundtail chub	<i>Gila robusta</i>	Utah Sensitive	Yes
Flannelmouth sucker	<i>Catostomus latipinnis</i>	Utah Sensitive	Yes

Migratory Birds

The Migratory Bird Treaty Act, as amended, was promulgated for the protection of migratory birds. All raptors observed in Utah are protected by the Migratory Bird Treaty Act and some birds are also protected by the Endangered Species Act (ESA), the Bald and Golden Eagle Protection Act, and/or are included in the Utah Natural Heritage Program Species of Greatest conservation Need (UDWR, 2005). A draft Memorandum of Understanding between the Forest Service, the BLM and USFWS provides direction for the management of migratory birds to

			<p>promote their conservation (FWS, 2002e). The direction includes identifying species listed in the FWS Birds of Conservation Concern (BCC) that are likely to be present in the area of a proposed action. The Utah Partners in Flight (UPIF) working group completed a statewide avian conservation strategy identifying “priority species” for conservation due to declining abundance distribution, or vulnerability to various local and/or range-wide risk factors. One application of the strategy and priority list is to give these birds specific consideration when analyzing effects of proposed management actions and to implement recommended conservation measures where appropriate.</p> <p>The UPIF Priority Species List and the Utah Conservation Data Center database were used to identify potential habitat for priority species that could utilize habitat within the project area. Potential habitat and species are listed below.</p> <table border="1"> <thead> <tr> <th colspan="4">Utah Partners in Flight Priority Species</th></tr> <tr> <th>Bird Name</th><th>DWR Habitat Value**</th><th>Breeding Habitat Type*</th><th>Winter Habitat*</th></tr> </thead> <tbody> <tr> <td>Brewer Sparrow*</td><td>High Value Habitat</td><td>Shrubsteppe/High Desert Scub</td><td>Migrant</td></tr> <tr> <td>Peregrine Falcon</td><td>Critical</td><td>Cliff</td><td>Wetlands</td></tr> <tr> <td>Virginia’s Warbler</td><td>Wintering Habitat</td><td>Oak brush</td><td>Migrant</td></tr> <tr> <td>Prairie Falcon</td><td>Critical/High</td><td>Cliff</td><td>Agriculture</td></tr> <tr> <td>Sage Sparrow</td><td>Critical</td><td>Shrubsteppe</td><td>Low Desert Scrub</td></tr> <tr> <td>Broad-tailed Hummingbird</td><td>Critical Value Habitat</td><td>Lowland Riparian</td><td>Migrant</td></tr> </tbody> </table> <p><i>*Utah Partners in Flight Avian Conservation Strategy Version 2.0</i></p> <p><i>**Utah Conservation Data Center</i></p> <p><u>Big Game Species</u></p> <p>There is no big game habitat within this allotment, but there are a few mule deer along the Colorado and Dolores Rivers.</p> <p><u>Other Wildlife</u></p> <p>Animals typically associated with desert shrub communities and canyon topography may include mountain lions, bobcat, coyotes, foxes numerous species of snakes, lizards, small mammals, raptors, and songbirds. The most commonly observed species include gopher snakes, antelope ground squirrels, cottontail rabbits, blacktailed jackrabbits, coyotes, mourning doves, horned larks, golden eagles, redtailed hawks and ravens.</p>	Utah Partners in Flight Priority Species				Bird Name	DWR Habitat Value**	Breeding Habitat Type*	Winter Habitat*	Brewer Sparrow*	High Value Habitat	Shrubsteppe/High Desert Scub	Migrant	Peregrine Falcon	Critical	Cliff	Wetlands	Virginia’s Warbler	Wintering Habitat	Oak brush	Migrant	Prairie Falcon	Critical/High	Cliff	Agriculture	Sage Sparrow	Critical	Shrubsteppe	Low Desert Scrub	Broad-tailed Hummingbird	Critical Value Habitat	Lowland Riparian	Migrant
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e) Appropriate amount, type, and	Yes	N/A	SMU 71 vegetation upland site visited during the 2009 field assessment shows the appropriate amount, type, and distribution of vegetation that																																

<p>distribution of vegetation reflecting the presence of (1) the desired plant community (DPC), where identified in a land use plan, conforming to these standards or (2) where the DPC is not identified, a plant community that equally sustains the desired level of productivity and properly functioning ecological conditions.</p>			<p>reflects the desired plant communities (DPC). This site is in Properly Functioning Condition (PFC) with the current ecological conditions.</p> <p>The KA-3 is functioning and the trend is slight downward (long trend study read in 2012). This is due reduction of Needle and thread grass which is a minor component of this ecological range site and slight reduction of shadscale which was due to insect infestation with this shrub species.. The slight reduction or apparent loss of native perennials is more than likely a result of drought conditions coupled with an insect infestation with the shrub species (Shadscale). Bare ground at KA-3 is considered to be lower than what is expected for the natural potential of this site due to the amount of cheatgrass and litter.</p> <p>KA-3 and SMU 57 show a plant community capable of being equally sustainable to the DPC with the exception of cheatgrass being more prominent. Cheatgrass has the potential to change ecological conditions;</p> <ul style="list-style-type: none"> • The hydrological process is changed due to the growth of the plant. Cheatgrass begins growing in the fall and even when snow is on the ground, this allows for the plant to grow and develop rapidly during the spring months. This reduces the amount of water that would have infiltrated into the ground. • Nutrient cycling is changed, the grass uses up nutrients relatively fast during the growing season. Nutrients like nitrogen and phosphorus are typically the limiting factor to the growth of plants. This makes the nutrients less available to native plants. <p>Even though the cheatgrass is present the native plants are competing for the resources and helping to sustain the ecosystem. These sites are functioning with the current ecological conditions.</p> <p>There is a slight reduction in plants within this allotment which is due to the past drought years and the insect infestation with the shadscale plants. There is fair to good plant diversity for shrubs and grasses in all sites. There is good vigor for all plants within this allotment.</p> <p>This allotment is meeting Standard #3.</p>
<p>#4 Clean Water</p> <p>BLM will apply and comply with water quality standards established by the State of Utah (R.317.2) and the Federal Clean Water and Safe Drinking Water Acts. Activities on BLM lands will fully</p>	<p>Yes</p>	<p>N/A</p>	<p>Utah Rangeland Health Standard #4 requires “BLM will apply and comply with water quality standards established by the State of Utah (R.317-2) and the Federal Clean Water and Safe Drinking Water Acts. Activities on BLM lands will fully support the designated beneficial uses described in the Utah Water quality Standards (R.317-2) for surface and ground water”. As indicated by:</p> <ul style="list-style-type: none"> • Measurement of nutrient loads, total dissolved solids, chemical constituents, fecal coliform, water temperature and other water quality parameters.

<p>support the designated beneficial uses described in the Utah Water Quality Standards (R.317-2) for surface and ground water.</p>			<ul style="list-style-type: none"> • Macro invertebrate communities that indicate water quality meets aquatic objectives. <p>Utah water quality standards do not apply to ephemeral drainages and the associated storm runoff flows.</p> <p><u>Colorado River:</u></p> <p>The Colorado River is sampled at the Utah-Colorado state line (approximately 30 miles upstream of the allotment) and at Highway 191 (approximately 25 miles downstream of the allotment). These sites are sampled by State of Utah DWQ staff on regular basis.</p> <p>The Colorado River is on the 2006 List of Impaired Waters published by the State of Utah. The segment of the river from the Utah-Colorado Stateline to the confluence with the Green River has been determined to be “not meeting beneficial use classification 3b”, due to high levels of selenium. Classification 3B protects warm water species of game fish and other warm water aquatic life, including the necessary aquatic organisms in their food chain. The main source of selenium is Mancos Shale areas in Colorado, with the highest contribution from the Grand Junction and Montrose areas.</p> <p><u>Dolores River:</u></p> <p>There is water quality data available for the Dolores River, measure adjacent to the allotment. The State of Utah monitors water quality just upstream of the confluence with the Colorado River on a frequent basis.</p> <p>The Dolores River and its tributaries (except Granite Creek) are on the List of Impaired Waters, 2008, submitted to EPA in May, 2008. The pollutants are identified as salinity, total dissolved solids and chlorides. No report (TMDL) has been initiated to date on this situation. When recommendations from the state are developed, BLM will follow all recommendations that apply. These recommendations may include improvements to the riparian conditions along the Dolores River corridor.</p> <p>Since a detailed analysis of the watersheds and related water quality data has not been completed to date, we do not know how much (if at all) the Hotel Mesa Allotment is contributing to poor water quality conditions. Soils, floodplains and riparian resources in the allotment are in stable to good condition. This would not contribute to poor water quality conditions in either the Colorado River or the Dolores River. These two riparian areas are in Properly Functioning Condition (PFC). Based on the perennial water in the Hotel mesa Allotment we have concluded that it is meeting Utah Rangeland Health Standard #4.</p>
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RANGELAND HEALTH DETERMINATION

Causal Factors

For those Standards not being met, identify the causal factors and the evidence used to reach a conclusion regarding causal factors:

Standard #1:

Causal Factor(s): N/A

Evidence Used:

Quantitative methods used were:

Two quantitative methods were used to assess the vegetation and ground cover: 1) density and 2) line point intercept. Density of key species was sampled at one key area within the allotment. Line point intercept was used to collect cover data at all sites (3 sites). Ground cover was calculated as a percentage for each cover class of interest. Soil Stability was also recorded at all sites (3 sites) using the soil stability test kit.

Qualitative methods used were:

Repeat photographs as well as ancillary photographs and visual assessments.

Standard #2:

Causal Factor(s): N/A

Evidence Used:

Qualitative methods used were:

There are two riparian areas within Hotel Mesa Allotment which are the Colorado and Dolores Rivers. Riparian assessment PFC was conducted in 2009 and both riparian areas have Properly Function condition (PFC). Repeat photographs as well as visual assessments were done.

Standard #3:

Causal Factor(s): N/A

Discussion:

The landscape that includes the Hotel Mesa Allotment was historically grazed heavily; primarily by large cattle herds and sheep herds. Small railroad towns with livestock shipping station (Westwater, Little Hole, Cisco, Thompson, etc.), emerged throughout the landscape around the middle of the 1800's, last several decades and began to dissolve as the socio economic structure of the West shifted. However, during this time rangelands were grazed without grazing management practices, which specifically deal with immediate and long term ecological effects from different patterns of use. Although, quantitative data does not exist to verify the vegetative and ecological structure that was present many scientists, historians, land users, and managers feel that these decades signified an ecological turning point throughout the many areas of the West. Grazing has been increasingly managed since the passage of the Taylor Grazing Act, and today short term, and long term ecological effects are taken into consideration when evaluating grazing use levels. Grazing as a landscape level disturbance can affect the serial states of vegetative communities; however, as climates shift, serial states may also be determined by the frequency, intensity and duration of localized precipitation.

In July 1997 an allotment evaluation was done with the following conclusions: with few exceptions, study data suggest that range conditions are at an acceptable level, trend is static, and overall present management is resulting in changes towards most management objectives for the vegetation and soils. The evaluation also indicates that there has been an insect infestation that may seriously jeopardizing the health of shadscale and Fourwing saltbush in the future and BLM decided to continue to closely monitor this situation. This indicates that the livestock management strategy is adequate.

During the last eighteen years (1997-2015), the average level of grazing use for the Hotel Mesa allotment has been 35% of preference (*see Hotel Mesa Allotment Appendix F of this EA for actual use table*). The permittees has taken seven years of non-use which includes the drought years (1999-00, 2001-02 and 2011-12). During the 2001-02 drought years the grasses was slightly reduced and the insect infestation with the shadscale plants are still continuing at the present time. The long term trend in 2012 is slightly downward due to the drought and insect infestation with the shadscale plants. There are plenty of perennial plants that are reproducing and there is recruitment of young plants into the plant communities.

All three sites are Properly Functioning within the Hotel Mesa Allotment. The intent of this assessment is to identify potential problems occurring on the landscape in relation to grazing and possible other land uses. The Moab Field Office BLM would continue to monitor the allotment for ecological changes and precipitation, and grazing use would be determined and authorized on an annual basis to appropriately reflect management objectives. This allotment is rated as meeting this standard as a result of the 2009 assessment and the updated data in 2015.

Evidence Used:

Quantitative vegetation data was collected at key area #3 upland site. Qualitative data was collected at all sites previous listed as well as ancillary sites SMU57 and SMU71. Old photos of key area sites were also used as qualitative data in this assessment as well as other pertinent allotment records and data (actual use, fire history, wildlife records, etc.).

Quantitative methods used were:

Two quantitative methods were used to assess the vegetation and ground cover: 1) density and 2) line point intercept. Existing density plots were sampled at one key area site. Line point intercept was used to collect cover data at three sites which includes key areas and ancillary sites. 50 cover points were collected along two 250 ft. long transects at three sites at the end of the growing season). Ground cover was calculated as a percentage for each class of interest. Soil Stability was recorded at three sites using the soil stability test kit.

Qualitative methods used were:

Ancillary photographs, visual assessments and other data were used in this determination.

Standard #4:

Causal Factor(s): N/A

The Moab Field Office BLM would continue to monitor the Colorado and Dolores Rivers riparian areas and precipitation.

Evidence Used:

Water samples on the Colorado and Dolores Rivers were taken within this allotment and were analyzed general chemistry.

Quantitative methods used were:

There are two perennial water sources within the Hotel Mesa Allotment which are the Colorado and Dolores Rivers. Water samples were taken on these rivers. Riparian assessment of Properly Functioning Condition (PFC) was conducted in 2009.

Grazing Management Questions:

- 1) Is it more likely than not that existing grazing management practices or levels of grazing use are significant factors in failing to achieve the Standard or conform to the guidelines?

_____ **Yes** X **No**

Rationale: the vegetative communities in the uplands are meeting Rangeland Health Standards and Guidelines are being conformed within the Hotel Mesa Allotment.

- 2) It is more likely than not that existing grazing management needs to be modified to ensure that the Fundamentals of rangeland health are met or making significant progress toward being met?

_____ **Yes** X **No**

Rationale: The Moab Field Office has determined that all Fundamentals of Rangeland Health have been met in consideration of the allotment's ecological, geological and geomorphological potential. The existing permit authorizes cattle within the Hotel Mesa Allotment during winter and spring months. The allotment has been managed for drought impacts by taking non-use during the drought years and after the drought years .

The long term trend studies was last read in 2012 which show downward in Key Area #3 and upward trend in old study plot #1 within the uplands. The downward trend was due to drought condition and insect infestation with the saltbush. The livestock use has only been 35% of preference and utilization has been light to moderate with seven years of non-use. Colorado and Dolores Rivers riparian areas are Properly Functioning with an upward trend.

Conformance with Guidelines for Grazing Management

Existing grazing management X **Conforms with** _____ does not conform with Utah's Guidelines for Grazing Management.

Guidelines not currently being followed are: N/A

Determination Summary

Based on my review of the Assessment Team's recommendation, Evaluation of Rangeland Health Standards and other relevant information, and as indicated in this document I have determined that the Allotment.

 X **Meets**

_____ **Fails to Meet but is making progress toward meeting**

_____ **Fails to Meet and is not making significant progress toward meeting**

Utah's Standards for Rangeland Health and that current grazing practices

X **are** in conformance with Utah's Guidelines for Grazing Management

 are not in conformance with Utah's Guidelines for Grazing Management.

I have also determined that livestock grazing management practices:

NA **are not** the primary factor in failing to achieve the standards.

NA **are** the primary factor in failing to achieve the standards.

APPENDIX E

Apparent Trend Study Data

Sand Flats Allotment Apparent Trend Data

Key Area	Apparent Trend				
	Years 2001-2014				
	2001-02	2007-08	2013-14		Current Overall Apparent Trend by Pastures
Sand Flats West Pasture					
Old Plot #1	*	Upward	Upward		Upward
KA-15	Static	Static	Upward		
KA-17	Static	Static	Upward		
Sand Flats East Pasture					
Old Plot #6	Upward	Upward	Upward		Static to Upward
KA-14	Static	Static	Static		
Knowles Pasture					
KA-16	Static	Static	Static		Static to Upward
Old Plot #27	Upward	Static	Static		
Old Plot #28	Static	Static	Static		
KA-30			Upward		
Hotel Mesa Pasture					
KA-8	Static	Upward	Upward		Static to Upward
Old Plot #9	Upward	Upward	Static		
KA-13	Upward	Upward	Upward		
Cow Creek Pasture					
KA-7	Static	Upward	Upward		Upward
KA-33 (New Plot)			Upward		
Buckhorn Pasture					
Old Plot #10	Static	Static	Static		Static
KA-21	Static	Static	Static		
KA-22	Static	Static	Static		
KA-24	Static	Upward	Static		
Sand Blast Pasture					
KA-39	*	Upward	Static		Static

*Apparent was not done on these years.

Scharf Mesa Allotment Apparent Trend Data

Key Area	Apparent Trend				
	Years 2001-2014				
	2001-02	2006-07	2007-08	2013-14	Current Overall Apparent Trend by Pastures
Upper Scharf Mesa Pasture					
KA-2	Static	Static	Static	Upward	Static to Upward
KA-3	Static	Upward	Static	Upward	
KA-23	Static	Static	Static	Static	
Lower Scharf Mesa Pasture					
KA-1 (New Plot)				Static	Static
Wild Life Plot (New Plot)				Static	

Hotel Mesa Allotment Apparent Trend Data

Key Area	Apparent Trend				
	Years 1997-2014				
	1997-98	2000-01	2007-08	2013-14	Current Overall Apparent Trend by Pastures
Old Plot #1	Upward	Upward	Upward	Upward	Upward
KA-3	Static	Static	Upward	Upward	

APPENDIX F

Actual Use Data

	Sand Flats Allotment								
Years	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
AUMs	793	814	819	1,057	983	*543	434	1,124	*1,220
Years	2012-13	2013-14	2014-15						
AUMs	590	756	971						

*Drought Years

Total Active AUMs for Sand Flats Allotment from 2003-2015 each year is 1,152.

	Scharf Mesa Allotment								
Years	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
AUMs	71	53	Non-use	57	*198	Non-use	34	*90	22
Years	2013-14	2014-15							
AUMs	76	134							

*Drought Years

Total Active AUMs for Scharf Mesa Allotment from 2003-2015 each year is 277.

	Hotel Mesa Allotment								
Years	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06
AUMs	Non-use	148	*Non-use	Non-use	*Non-use	Non-use	Non-use	50	82
Years	2006-07	2007-08	2008-09	2009-10	2010-11	*2011-12	2012-13	2013-14	2014-15
AUMs	153	86	*81	35	169	6	Non-use	96	179

*Drought Years

Total Active AUMs for Hotel Mesa Allotment each year is 174.

APPENDIX G

WILDERNESS INTERIM MANAGEMENT IMPAIRMENT/NON-IMPAIRMENT EVALUATION FORM

With the passing of the deadline for completion of reclamation activities in September of 1990, only temporary, non-surface-disturbing actions that require no reclamation; grandfathered uses, and actions involving the exercise of valid existing rights can be approved within WSA's. Reference document for evaluators and managers is Manual 6330-Management of Wilderness Study Areas.

DESCRIPTION OF ACTION

Name of action: EA # DOI-BLM-UT-Y010-2016-0041-EA

Proposed Action: X **Alternative Action:** _____ (check one)

Proposed by: Moab BLM

Description of action: Moab BLM proposes to issue a ten-year livestock grazing permit renewal for the Sand Flats, Scharf Mesa and Hotel Mesa Allotments, located east of Moab, Utah. The new permit would describe the season of use, the type of livestock allowed, and the numbers of livestock allowed within these allotments. Portions of the Sand Flats Allotment lie within the Westwater Canyon Wilderness Study Area (WSA). *The only portions of the permit to be analyzed in this document are those activities within the Westwater Canyon WSA.*

Location: The Sand Flats, Scharf Mesa and Hotel Mesa Grazing Allotments are located in the area known as the Dolores Triangle east of the Dolores River and south of the Colorado River.

What BLM WSAs are included in the area where the action is to take place?

Westwater Canyon

VALID RIGHTS OR GRANDFATHERED USES (if any)

Is lease, mining claim, or grandfathered use pre-FLPMA? X Yes No

If yes, give name or number of lease(s), mining claim(s) or grandfathered use and describe use or right asserted:

Livestock grazing is an historical use that was identifies as an acceptable use under the Wilderness Act of 1964. The law provides for, and the BLM's policy is to allow, continuation of grazing leases in WSAs in the manner and degree in which these uses were being conducted at the date of the enactment of Federal Lands Policy Management Act (FLPMA), as long as they do not cause unnecessary and undue degradation of the lands. This is referred to as a "grandfathered" use. Grazing was occurring in the Sand Flats Allotment at the time of wilderness inventory in the late 1970's and early 1980's, and also at the time of the enactment of FLPMA (October 21, 1976).

Has a valid existing right been established? Yes X No

EVALUATION OF POTENTIAL FOR IMPAIRMENT OF WILDERNESS VALUES

Is the action temporary and non-surface disturbing? Yes X No

There are seven classes of allowable exceptions to the non-impairment standard defined in section 1.6.C.1. at the time of wilderness inventory in the late 1970's and early 1980's, and also at the time of the enactment of FLPMA (October 21, 1976). The law provides for, and the BLM's policy is to allow, continuation of grazing leases in WSAs in the manner and degree in which these uses were being conducted at the date of the enactment of Federal

Federal Lands Policy Management Act (FLPMA), as long as they do not cause unnecessary and undue degradation of the lands.

If yes, describe why action would be temporary and non-surface disturbing and identify the planned period of use:

When the use, activity, or facility is terminated, would the area's wilderness values be degraded so far as to significantly constrain the Congress's prerogative regarding the area's suitability for preservation as wilderness?

Naturalness: Naturalness as an ingredient in wilderness is defined as lacking evidence of man's impacts on a relatively permanent basis. The WSA acreage included in this permit renewal includes no provisions for erecting or placement of any permanent or even temporary structures. Grazing is an activity allowed in not only WSA's, but in designated wilderness.

Livestock grazing is an historical use that was identified as an acceptable use under the Wilderness Act of 1964. The law provides for, and the BLM's policy is to allow, continuation of grazing leases in WSAs in the manner and degree in which these uses were being conducted at the date of the enactment of Federal Lands Policy Management Act (FLPMA), as long as they do not cause unnecessary and undue degradation of the lands. This is referred to as a "grandfathered" use. Grazing was occurring in the Sand Flats Allotment at the time of wilderness inventory in the late 1970's and early 1980's, and also at the time of the enactment of FLPMA (October 21, 1976).

Livestock grazing in the Sand Flats Allotment has had no noticeable impact on wilderness characteristics historically, and the nature of grazing in the next 10 years is not expected to change. There are no proposals at this time for new developments or surface disturbing activities that would affect wilderness characteristics. Any such developments or activities that may be proposed in the future would be considered on a case-by-case basis, and impacts to wilderness values would be assessed and mitigated as appropriate at that time.

Outstanding Opportunities for Solitude: Any impact on solitude would be temporary; assuming that one's perception of solitude is affected by the presence of livestock.

Outstanding Opportunities for Primitive and Unconfined Recreation: There is no reason to believe that the proposed action would reduce these opportunities.

Optional Supplemental values: No perceived negative impacts.

Considered cumulatively with past actions, would authorization of the action impair the area's wilderness values?
__Yes X No

Rationale: BLM Manual 6330 emphasizes that grazing activities are allowed in WSA's. The permit renewal does not represent an increase in grazing above that of the 2008 Moab RMP, nor above that of the current permit. No potential negative impacts on the WSA from past permitted grazing have been identified.

RESULTS OF EVALUATION

Non-impairment Standard

The only actions permissible in study areas are temporary uses that do not create surface disturbance, require no reclamation, and do not involve permanent placement of structures. Such temporary or no-trace activities may continue until Congress acts, so long as they can be terminated easily and immediately.

The only exceptions to the non-impairment standard are:

1) emergencies such as suppression activities associated with wildfire or search and rescue operations,

- 2) reclamation activities designed to minimize impacts to wilderness values created by IMP violations and emergencies;
- 3) uses and facilities which are considered grandfathered or valid existing rights as defined in Manual 6330, including grazing,
- 4) uses and facilities that clearly protect or enhance the land's wilderness values or that are the minimum necessary for public health and safety in the use and enjoyment of the wilderness values, and
- 5) reclamation of pre-FLPMA impacts.

MAJOR CONCLUSION OF NON-IMPAIRMENT EVALUATION

Action clearly fails to meet the non-impairment standard or any exceptions, e.g. VER, and should not be allowed:

☐ Yes ☒ No

Action appears to meet the non-impairment standard:

☒ Yes ☐ No

Action may be allowable, pre-FLPMA grandfathered use:

☒ Yes ☐ No ☐ N/A

Action may be allowable, pre-FLPMA VER:

☐ Yes ☐ No ☒ N/A

OTHER CONCLUSIONS

Restrictions proposed may unreasonably interfere with pre-FLPMA rights or grandfathered uses:

☐ Yes ☐ No ☒ N/A

Reasonable measures to protect wilderness values and to prevent unnecessary or undue degradation of the lands are incorporated:

☒ Yes ☐ No ☐ N/A

Environmental Assessment required:

☒ Yes ☐ No

Plan of Operations Required:

☐ Yes ☐ No ☒ N/A

Discovery verification procedures recommended:

☐ Yes ☐ No ☒ N/A

Consider initiating reclamation through EA:

☐ Yes ☐ No ☒ N/A

RELATED ACTIONS

Media notification appropriate: (optional)

☐ Yes ☒ No

Federal Register Notice appropriate: (optional)

☐ Yes ☒ No

Information copy of case file sent to USO-933:

☐ Yes ☒ No

Evaluation prepared by: William P. Stevens April 27, 2016
Name(s) Date

APPENDIX H

CULTURAL RESOURCE INVENTORY REPORT (U-16-BL-0222)



United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Moab Field Office

82 East Dogwood

Moab, UT 84532

<http://www.blm.gov/ut/st/en/fo/moab.html>



In Reply Refer to:
8110 (LLUTY01200)

APR 22 2016

CERTIFIED MAIL NO. 7014 3490 0001 5249 7019

Attn. Dr. Christopher Merritt
Deputy State Historic Preservation Officer
Utah State Historical Society
300 S. Rio Grande
Salt Lake City, Utah 84101-1182

Re: Determination of No Adverse Effect for the 2016 Moab Group 2 Grazing Allotment Renewal Inventory

Part I. Project Description

County: Grand

Project: U-16-BL-0222

Dear Dr. Merritt,

Enclosed for your review is the *2016 Moab Group 2 Grazing Allotment Renewal Inventory* report. The Bureau of Land Management, Moab Field Office (BLM) seeks your concurrence with our determination of **No Adverse Effect** for the renewal of the livestock grazing permits on the Sand Flats, Scharf Mesa, and Hotel Mesa allotments. The SHPO previously concurred with the BLM's determinations of eligibility and received report, U13-SQ-0564, under Case Number 14-0129. William Self and Associates (WSA) conducted inventory on the three allotments and investigated impacts from cattle as a part of this permit renewal process and reported their findings in U-13-SQ-0564.

As part of the renewal, a BLM Range Specialist identified 25 range improvements on the allotment which required inventory. The BLM archaeologist also identified nine other areas with high site potential to inventory on the allotment. The BLM currently permits 310 cattle on the allotments from November to May.

Part II. Identification Efforts

William Self and Associates performed Class III inventories at the 25 identified cattle congregation areas and the nine predicted high site density areas on the allotments for U-13-SQ-0564. The BLM had WSA complete these efforts to identify any potential adverse effects to historic properties from renewing the permits on the three allotments. During these inventories, WSA located 13 new cultural resource sites, 42GR4909-42GR912, 42GR4921, 42GR4931,

Received
APR 25 2016
USHPO

42GR4932, 42GR4934, 42GR4935, 42GR4936, 42GR4937, 42GR4938, and 42GR4942. WSA also updated five previously recorded sites, 42GR31, 42GR798, 42GR1292, 42GR1293, and 42GR1294. The sites are primarily lithic scatters or quarries with a few rockshelters. The other sites are historic roads, structures, or historic sites related to mining. Sites 42GR31, 42GR1292, 42GR1293, and 42GR1294 were not relocated.

For U-16-BL-0222, the BLM examined grazing use, performed a literature search, reviewed U-13-SQ-0564, and monitored archaeological sites 42GR4931 and 42GR4937. The BLM also conducted Class III pedestrian archaeological inventory for a fence and cattle guard on the Sand Flats allotment.

Part II. Eligibility & Effect Determinations

Archaeological contractor, WSA, located and updated 18 sites on the Sand Flats, Scharf Mesa and Hotel Mesa allotments. The BLM determined and received concurrence from the SHPO under Case 14-0129 that six of the sites (42GR4909, 42GR4931, 42GR4932, 42GR4937, 42GR4938, and 42GR4942) are eligible to the National Register of Historic Places (NRHP). The BLM also determined and received concurrence that seven sites (42GR4910-42GR4912, 42GR4921, 42GR4934-42GR4936) are not eligible to the NRHP. The BLM maintains previous eligibility determinations.

William Self and Associates also updated five previously recorded archaeological sites. The BLM did not make determinations for the five previously recorded sites under Case Number 14-0129. The BLM now determines that 42GR0798 is eligible to the NRHP. WSA could not relocate 42GR0031, 42GR1292, 42GR1293, and 42GR1294. Previous recorders recommended 42GR1292 and 42GR1293 as eligible to the NRHP and 42GR1294 as not eligible to the NRHP. The BLM is not making new determinations of eligibility for these four sites, but consider them to not be adversely effected by the current undertaking. The sites were likely misplotted and are not within the current APE.

William Self and Associates noted potential or ongoing impacts at 42GR4931 and 42GR4937 on the allotments. The BLM reviewed the report and decided to revisit 42GR4931 and 42GR4937. The BLM monitored and updated site 42GR4937. The site had no adverse effects from grazing. WSA noted the potential for impacts at the 42GR4931 if the reservoir on-site comes back into use. The reservoir is still not in use and the BLM is not rehabilitating the reservoir for the permit renewal. The BLM still considers both sites eligible to the NRHP. WSA did not note any grazing impacts at the other sites located on the Sand Flats, Scharf Mesa, and Hotel Mesa allotments.

Table 1. Site Table with BLM Eligibility and Effect Determinations

Site Number	Determination of Eligibility			Determination of Effect			Relocated
	Not Eligible	Eligible	Eligibility Criteria	No Effect	No Adverse Effect	Adverse Effect	
42GR0031	N/A	N/A	N/A	N/A	N/A	N/A	NO
42GR0798		X	D		X		
42GR1292		X	D	N/A	N/A	N/A	NO
42GR1293		X	D	N/A	N/A	N/A	NO
42GR1294	X						NO

Site Number	Determination of Eligibility			Determination of Effect			Relocated
	Not Eligible	Eligible	Eligibility Criteria	No Effect	No Adverse Effect	Adverse Effect	
42GR4909		X	D		X		
42GR4910	X						
42GR4911	X						
42GR4912	X						
42GR4921	X						
42GR4931		X	D		X		
42GR4932		X	A & D		X		
42GR4934	X						
42GR4935	X						
42GR4936	X						
42GR4937		X	D		X		
42GR4938		X	D		X		
42GR4942		X	A & D		X		

The BLM also conducted pedestrian inventory for the construction of a new fence and cattle guard on the Sand Flats allotment for the permit renewal. The BLM identified no new cultural resource sites or previously recorded sites in the fence APE.

Based on the lack of adverse effects to historic properties in the identified congregation areas, lack of adverse effects caused by grazing to the known historic properties, professional judgment of the type and number of historic properties, and professional judgment of livestock distribution in the allotments, the BLM makes a determination of **No Adverse Effect** for the renewal of the 10 year grazing permits on the Sand Flats, Scharf Mesa, and Hotel Mesa allotments.

Should you have any questions regarding this project please contact Moab Field Office archaeologist, M. Jared Lundell, at (435) 259-2137 (mlundell@blm.gov).

BUREAU OF LAND MANAGEMENT, MOAB FIELD OFFICE.


FIELD OFFICE MANAGER

4/28/16
DATE

UTAH STATE HISTORIC PRESERVATION OFFICER

☒ Concur ☐ Do Not Concur


Enclosures

Elizabeth Horta-Cook for Chris Herkitt

4/28/2016
DATE

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